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ARCHITECTVRE

ENGINEERING

DECORATION

CONSTRVCTION

NEW YORK
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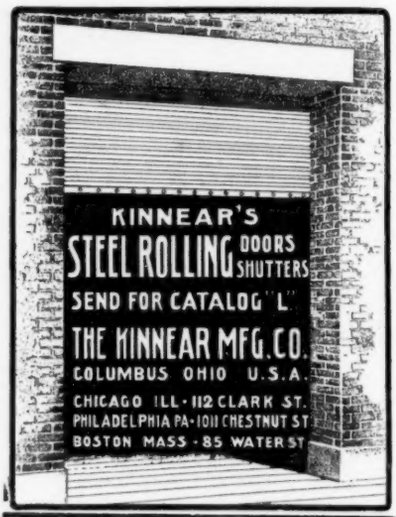

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EXHIBITIONS

The students of the Museum of Fine Arts School of Design opened an exhibition in Boylston Chambers, 739 Boylston street, Boston, Thursday, March 16th.

ST. LOUIS, MO.—An exhibition of water-colors by members of the American Water-Color Society was opened in the galleries of the St. Louis Museum of Fine Arts on March 7.

PITTSBURG, PA.—In connection with the opening, February 25, of the Carnegie Institute's collection of paintings in the Temporary Galleries, the director announces the recent purchase by the Fine Arts Committee of three paintings: "Suburb of Antwerp," by J. C. Cazin, an unusually strong work; "The Port of Trouville," by Eugene Boudin, a work of Boudin's best period, and "Greenwich Hills," by John H. Twachtman, one of the artist's characteristic subtile paintings of winter. The Institute's 1904 gold medal painting, "Across the River," by W. Elmer Schofield, and the large panel, "The Mirror in the Vase," by Edmond Aman-Jean, both purchased from the recent international exhibition, are new works in the collection.

The director also announces the temporary withdrawal of two paintings from exhibition: "Portrait of Sarasate," by Whistler, loaned for the Memorial Exhibition in London, and "Miss Kitty," by J. J. Shannon, contributed to the special exhibition of Mr. Shannon's American works in New York.

SOCIETIES

The National Sculpture Society, through the generosity of its honorary president, Mr. J. Q. A. Ward, and that of one of its lay members, Mr. I. W. Drummond, is offering two prizes, one of $500 and one of $200 for a competition in portraiture.

The first prize is to be awarded to the best portrait in the round, the second prize to the best portrait in relief.

The purpose of this competition is to stimulate the art of portraiture, thereby bringing more forcibly to the minds of the sculptors and the laymen a branch of the sculptor's work that has not heretofore, in this country, obtained sufficient importance.

Works entered for this competition are to be judged in the early part of November, 1905, by a jury selected by the society at large. A prospectus governing the competition may be had by addressing the secretary of the National Sculpture Society at 215 W. 57th St.

BUREAU OF FORESTRY'S PROGRESS IN METHODS OF TURPENTINING.

The old system of boxing Southern pine trees for the production of turpentine and resin has very greatly reduced the pine timber wealth of the Southern States. Three years ago the Bureau of Forestry determined that something should be done to eliminate so destructive a method of procuring naval stores. Its three years of experiments toward this end have demonstrated that a new system of turpentining, which requires the use of earthen cups and metal gutters, not only greatly conserves the life of the timber tapped, but also gives an increased yield of resin, and therefore a greater profit than is possible by boxing.

The Bureau of Forestry feels that a still more conservative method of turpentining can be found which, consistent with a maximum yield of turpentine, will inflict the smallest possible injury upon the trees. With this in view, the bureau has begun an entirely new line of field experiments, in order to determine to what extent the wound now made in tapping trees can be lessened.

Through the co-operation of the Hillman-Sutherland Land Company of Jacksonville, Fla., a stand of about 40,000 pine trees in Clay County, Florida, with other facilities, have, without cost to the Government, been placed at the disposal of the bureau for experimental purposes.

An illustration of how a subordinate might have saved his employers $10,000 is furnished the *New York Commercial* by a well-known builder.

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engravers and etchers. The architects planned for plenty of light. The engineers and builders allowed for the weight of the machinery, for elevators and so forth, and one corner was set aside for a "dark room." The building was completed recently, and a lease was drawn and taken to the engraving firm that had expressed a desire to locate at this particular corner. The members of the firm visited their new quarters and selected sites for various machines and noted the "dark room." Everything seemed to be very satisfactory.

"Where is the drain pipe?" asked a member of the firm.

"What drain pipe?" said the agent.

"Why, the pipe to carry off the water. You know we use an immense amount of water in our business."

The architects were consulted. "Oh, that'll be all right!" said one of them. "Use the soil pipe."

"Not big enough," said the practical engraver. And so it proved. Not a pipe in the sky-scraper was large enough to carry off the waste water from the engraving plant.

"What can be done?" was the next question. A conference was held, and it was decided that the walls would have to be torn out from the top story to the basement in order to put in a pipe of sufficient size, and the cost was placed at $10,000. Had some employe made inquiries of the engravers concerning the practical needs of their business before the building was put up he might have saved this snug sum for some one. The lease was not signed.

COLORED WOODS FOR FURNITURE.—The colored-wood industry began in Italy in the 17th century, and wood-coloring works came to Sweden during the Thirty Years' War; but until quite recently the method was used on a very small scale, and at first only dry wood was colored. Now, by the method invented by an Austrian, Joseph Phister, in 1901, the wood is colored when fresh. The tree is cut while the sap is in action, and in the coloring process the dye is forced under heavy pressure into the wood and replaces the sap. Until recently the non-poisonous colors and "anilin" have been used, but those colors fade a little. Now the manufacturers can color to a length of 13 feet. Birch, beech, alder, maple, elm, and basswood are the best kinds of wood for the purpose; oak is not good on account of the tannic acid, and in spruce and pine the color can not be made uniform. The wood looks best when polished and when it is given a gay color. The prices are yet comparatively high on account of the amount of waste, but improvements may follow; and with cheaper prices and more extensive use it is considered that colored wood will give Sweden an important income. It can be used in furniture, panels, and doors, also in outside work in order to avoid painting. It is especially good for fitting ships and tram cars, and also for elegant and modest furniture. During 1903 and 1904 many works for such wood have been built.—*Robert S. S. Bergh, United States Consul, Gottenborg, Sweden.*

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NOTES AND CLIPPINGS

Magnetism as a Detective.—A target consisting of a mass of metal weighing nearly a ton disappeared at Aldeburgh-on-Sea, the high tide having covered it over with thousands of tons of shingle. All attempts to discover it failed until a schoolmaster and his pupils conceived the idea of taking hundreds of readings with a prismatic compass and drawing the lines of magnetic force upon squared paper. These lines indicated a magnetic force ance 63 feet away from the target's original position. The shingle was removed at the spot indicated, and there, deep down, was the missing target.—*London Mail.*

Wire Saws in Stone Quarries.—Stone sawing by wire is done successfully in France, according to a paper by Mr. E. Bourdon in the Bulletin of the Society for the Encouragement of National Industry. A complete plant comprises an endless wire passing round a series of pulleys, one of which is a driving-pulley. The necessary tension is obtained by a straining trolley working on an inclined plane, and between the driving shaft and this trolley is situated the saw frame, which carries the guide-pulleys for the wire saw. This wire, which is driven at a given speed, is caused to press lightly on the stone, and the cutting is done by sand mixed with water, which is conveyed into the saw-cut as the work proceeds. Though the mode of operation appears simple, it entails various difficulties in practical application. Three twisted steel wires are used, each wire having a diameter of 0.098 inch. The strands must be twisted fairly tight, and should make one turn in 1.18 inch. The wire may be driven in the workshop at a speed of 23 feet per second, but in quarries or adits the speed should not exceed 13 feet per second. The force exerted by the wire to produce the cut must be uniform and must be capable of being readily varied; moreover, it must be proportionate to the length of the cut.—*Scientific American.*

A Museum of Peace and War.—A strange museum has been found at Lucerne. It is entitled the Museum of Peace and War, and is intended as a complete history of war from the earliest times. The contents are warlike arms of all ages and nations, books, prints representing the horrors of war in their most realistic aspect, and everything that can throw a candid light upon a grim subject. The founder of the museum is M. Jean de Bloch, a wealthy Pole, who is philanthropic, and perhaps a little eccentric, and he has chosen Lucerne for the site as being the place most likely to attract the largest number of cosmopolitan visitors.—*Boston Transcript.*

Switzerland's Sea Port.—Basle in Switzerland is anxious about its merchant marine. In 1896 the municipality offered to contribute 2,725,000 francs to the project of a Rhine-to-Rhone Canal, and the Assembly voted another million toward such a project. But the German Government, at the instigation of the chambers of commerce in Strasburg, Mannheim and Mulhausen, refused to join in the undertaking. Now once again there is agitation for the canal, and the hopes of Basle are raised on high once more. A long step toward a realization of Basle's ideas was made last month. Following on a survey by a Swiss engineer, Gelpke, a society of engineers, manufacturers and dealers, has been formed, with the purpose of "preparing proper means for rendering navigable for large boats the Rhine from Strasburg to Basle, and beyond Basle to the Lac de Constance." As it is, the Rhine for 150 days in the year is navigable for boats of 1,500 tons from Basle to Rotterdam or Anvers. What it is hoped to do is to control the flow of water so that the maximum depth of the channel may be preserved for a much longer period—by manipulating the discharge from the Lac de Constance. The main difficulty to be encountered is not a physical one, but the intangible though forcible objection by the railroads likely to be affected. It seems that industry in the upper Rhine yields them a fat return, which same industry might save as many as six annual millions if the river at this port might be made to float the 18,000,000 tons of merchandise yearly exchanged by Strasburg and Basle. Basle is the commercial metropolis and clearing house of Switzerland, and paradoxically speaking, is her one pretence at a sea port. If Basle manages to beat the railroads and clear the Rhine to the sea, we may yet see something of that Swiss navy of facetious fame. —*Boston Transcript.*

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BUILDING NEWS.

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ATLANTA, GA.—It is reported that the Presbyterian Society contemplates erecting $50,000 hospital. Walker Inman, chairman finance committee.

ATLANTA, GA.—It is reported that Asa G. Chandler has purchased the property at 165 Peachtree St., and contemplates erecting an 8-story department store.

ATLANTA, GA.—The Presbyterians of Atlanta are planning to build a $50,000 hospital, and steps have been taken to raise the necessary amount through subscription.

ALPENA, MICH.—Bids will be received until March 27 by the Building Commission (Mayor F. C. Holmes, chairman) for erecting a city hall. Plans by Clark & Munger, Shearer building, Bay City.

AUGUSTA, GA.—It is reported that $150,000 will be expended this summer in improvements to the Hotel Bon Air. Architects will be requested to submit plans at an early date. Address Capt. Wm. B. Young.

ALBION, N. Y.—The Board of Education has submitted to the people the question of issuing $110,000 bonds for the erection and furnishing of a school building.

ASTORIA, L. I., N. Y.—A site has been purchased by the Title Guarantee & Trust Co., with the intention of erecting a 6-story building for use of the company.

ATTLEBORO, MASS.—The Board of Trustees of the Public Library, intend erecting a $50,000 library on North Main street.

BIRMINGHAM, ALA.—W. H. Woodward and others have purchased site at Twentieth street and Fourth avenue, on which to erect a 12-story hotel. Cost, $500,000.

BRANDON, MAN.—Bids are desired March 24 for furnishing material for erecting a 4-story brick Y. M. C. A. building. Bids are to be submitted separately for masonry, carpentry, iron work, sheet metal, composition roofing, electric lighting, plumbing, electric light fixtures, etc. A. E. McKenzie, Secretary Building Committee, Y. M. C. A.

BROOKLYN, N. Y.—The Academy of Music Corporation has invited ten architects, including Frank Freeman, Geo. L. Morse, Lord Hewlett and Wm. M. Tubby, all of Brooklyn, to submit plans in competition for the new Academy of Music.

BUCKHANNON, W. VA.—The trustees of the Wesleyan University have decided to rebuild the main building, recently destroyed by fire, and are about to raise $30,000 for the purpose.

BALTIMORE, MD.—We learn that the Pub. Improv. Com. (Francis K. Carey, chairman) has adopted a report favoring the erection of a new Central Police Station. Building and ground will cost about $200,000.

BERKELEY, CAL.—It is reported that the Board of Education will issue $150,000 bonds for new schools, if proposition meets with approval of voters.

BRENTWOOD, L. I.—A bill to establish a normal and training school at Brentwood, under State control, has been introduced in the Senate. The bill appropriates $200,000 for the institution.

BROOKLYN, N. Y.—It has been decided that in addition to the new quarters that the local Board of Health is to have, a tuberculosis sanitarium is to be erected. Two sites for the new structure are under consideration, but the one most favorably thought of is in the vicinity of Flatbush Ave. and Fulton St. A stable is to be erected as well. It is estimated that the new building will cost about $175,000 or $200,000. It is expected that the new quarters will be ready for use a year from next October.

BOSTON, MASS.—The demolition of the Rialto building, corner of Milk and Devonshire Sts., is well under way. On the site is to be erected a modern bank structure for the New England Trust Co.

BOSTON, MASS.—Plans have been filed for the erection by the State St. Trust Co., 38 State St., of a 6-story limestone and terra-cotta building at Boylston St. and Massachusetts Ave.

BROOKLYN, N. Y.—The Aid Society connected with St. Catharine's Hospital, composed of women residents of the Eastern District, are raising a fund for the erection of an annex to the hospital building, which it is estimated will cost something like $60,000.

BUFFALO, N. Y.—The greater part of Providence Retreat, on North Main St., is

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to be torn down by the State Lunacy Board and replaced by a fine new structure, which will then form one of the most thoroughly equipped institutions for the care of the insane in the country. What is left of the old house will be entirely remodeled.

Boise City, Idaho.—The Trades Council has taken up the matter of building a labor temple, and a committee has been appointed to devise ways and means.

Cadiz, O.—Architects Allison & Allison, Westinghouse building, Pittsburgh, Pa., have plans for a stone bank and office building for the Fourth National bank. Cost, $35,000.

Carrick, Pa.—The Concord Presbyterian Congregation will build a new church to cost $30,000. Reverend A. H. Jolly, D.D., is pastor.

Chicago, Ill.—Thomas P. Brooke, a former resident of Dubuque, is the moving spirit in an enterprise which will give Chicago a novel and perfect hall for concerts. He has organized a company which will erect a building at a cost of $150,000 which will be used as a summer garden and as an exposition hall in the winter. The new building will be known as the Brooke Casino.

Chicago, Ill.—The Illinois Life Insurance Co. has secured site at LaSalle and Madison Sts., whereon will be erected a 20-story building. Cost, $5,000,000.

Chicago, Ill.—John A. Carroll intends to erect a 5-story fireproof storage warehouse on Cottage Grove Ave. and 52d St. Cost, $100,000.

It is stated that Levy Mayer has purchased the Medinah Temple at Fifth Ave. and Jackson Boulevard, and will make improvements to the upper stories, expending $100,000.

A 10-story mercantile building will be erected at Fifth Ave. and Van Buren St by James Clare, at a cost of $150,000.

Chicago, Ill.—It is reported that a Building Committee, consisting of Chas. L. Hutchinson, W. J. Watson and C. L. Raymond, has been appointed to arrange preliminary matters for the erection of a new edifice on the present site of the Old People's Home, 39th St. and Indiana Ave. Cost, $200,000.

A 3-story brick and stone apartment house, 175 x 125 feet will be erected by G. W. Stewart at Sheridan Road and Rokeby St. Cost, $80,000.

Appropriations are reported as follows: $235,000 for the Harrison St. Police Station, $60,000 for a new section for women at the House of Correction and $75,000 for public baths.

Plans have been drawn by L. Mart Mitchell, 145 LaSalle St., for a 3-story apartment building, 99 x 165 feet, to be built at Park Ave. and 59th St., for W. L. Beck. Cost, $75,000.

Chicago, Ill.—It is reported that the Board of Education has appropriated $115,000 for the purchase of additional grounds and the erection of a 15-room addition and an assembly hall to the John L. Marsh School, at Ninety-ninth street and Escanaba avenue.

Chicago, Ill.—It is stated that the Board of Directors of the John Crerar Library Association contemplate the erection of a library in Grant Park. Cost, $1,000,000.

A police station, costing $150,000, will be erected at Michigan Boulevard and 14th St.

Chicago, Ill.—It is reported that the Briggs Hotel Co. intends reconstructing the Briggs House, at an approximate cost of $50,000. Wm. M. Knight, president.

It is reported that the Thompson-Starrett Co., 51 Wall St., New York City, has received the contract to erect the Illinois Athletic Club building on Michigan Ave. Cost, $500,000.

The directors of the Commercial National Bank have purchased a site at Clark and Adams Sts., and intend erecting a 16-story building.

Report states that the members of the Marquette Club contemplate erecting an 8-story building on Dearborn Ave. and Maple St., to cost $85,000.

It is stated that the National Box Co. will make a 2-story addition, 95x225 feet, to its plant at 38th St. and Center Ave. Mill construction. Cost, $70,000.

Chambersburg, Pa.—New buildings and the extension and beautifying of Wilson College grounds are planned.

Charlottesville, Va.—With a capital stock of $150,000, the Jefferson Inn Co. is having plans prepared for a $100,000 hotel, to be erected on site recently purchased. Chas. H. Lawrence, 1819 Broad street, Philadelphia, president,

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CHIPPEWA FALLS, WIS.—The Chippewa Falls Construction Company is considering the erection of a $50,000 opera house at Bridge and Willow streets. Address J. C. Hansen.

CLYDE, ILL.—Report states that a $2,000,000 round-house will be erected here in the spring by the Burlington R. R. Co.

CINCINNATI, O.—John J. Ryan will erect an apartment house at McMillan street and Park avenue, to cost $50,000. Plans by Wm. W. Franklin, Glenn Building.

CINCINNATI, O.—Bids will be received April 3 by the trustees of Cincinnati Southern Railway, 57 Ingalls Building, for erecting a concrete freight station consisting of a 2-story office building 45 x 130 feet, an outbound freight house 25 x 1,100 feet, and an inbound freight house 42 x 1,100 feet.

CINCINNATI, O.—At the 35th anniversary dinner of the Cincinnati Chapter of the A. I. A., Prof. John Shearer, of the Ohio Mechanics' Institute, suggested that the Chapter center its efforts in securing an appropriate site and building for its needs, a handsome clubhouse or meeting place, where all its meetings could be held and its monthly or annual affairs given.

COLUMBUS, O.—As the result of the recent bequest of a capitalist, W. W. Franklin, plans will at once be prepared for a new Home for the Aged and improvements at the Children's Hospital. Each institution will receive $50,000.

COLUMBUS, O.—An insane hospital, costing in the neighborhood of $500,000, is to be located near Columbus. It will be erected by the State.

COLUMBUS, O.—The directors of the American Savings Bank have leased a site at High and Town streets, and intend erecting a 6-story building, to cost $80,000.

CEDAR RAPIDS, IA.—It is stated that the district will vote March 13 on enlarging the high school at a cost of $50,000.

DALLAS, TEX.—The members of the 150 Club are contemplating the erection of a $150,000 auditorium. Geo. A. Robertson, chairman Auditorium and Building Committee.

DALLAS, TEX.—The Baptist Society has under consideration the erection of a University at Dallas, to cost $75,000.

DAYTON, O.—The members of the Lutheran Church contemplate erecting a $50,000 edifice.

DAYTON, O.—The Lutheran congregation is said to have secured an option on the Copper Seminary building, for the purpose of erecting on the site a $50,000 church.

DAYTON, O.—The Troy-Pearl Laundry Co., just incorporated with a capital of $150,000, will erect a 3-story building at Ziegler St., and the canal, at a cost of $100,000.

DILLON, MONT.—The Oregon Short Line (E. Buckingham, General Superintendent Salt Lake City, Utah), is contemplating the erection of a depot in this city, to cost $50,000.

DAVENPORT, IA.—The Crescent Macaroni & Cracker Company will erect a $50,000 factory here.

DES MOINES, IA.—J. A. Garver intends to erect a $50,000 business block at Locust and 7th Sts. It will be 4 stories high.

DES MOINES, IA.—John A. Garver is considering the erection of a $50,000 business block on Locust St. just west of the Florentire block, between 7th and 8th Sts.

DENVER, COL.—John D. McGilvray intends erecting a gray pressed-brick apartment house on E. Eleventh Ave. and Ogden St., to cost $60,000.

DENVER, COL.—John D. McGilvray has purchased site at E. Eleventh Ave. and Ogden St., upon which he will erect a $60,000 brick apartment house.

DENVER, COLO.—Revised plans have been received by the Building Committee for the new public library, and as soon as they are approved bids will be asked for the erection. Cost, $250,000. Albert R. Ross, New York City, architect.

The Denver Dry Goods Co. contemplate the erection, next fall, of an 8-story steel and pressed brick building on California St. adjoining their present building. The cost will be about $300,000.

DUNKIRK, N. Y.—Chas. E. Whelpton and S. M. Hamilton have purchased the Y. M. A. lot on Central Ave., between the Blood livery stable and the Masonic property, and, it is reported, will build a big block thereon in the near future.

ETNA, PA.—Two lots have been purchased in Grant Ave. by the newly organized Presbyterian Society. Ground will be broken for a church edifice as soon as possible.

EL PASO, TEX.—A $50,000 Y. M. C. A. building will be erected at El Paso in the near future. E. M. Bary, president.

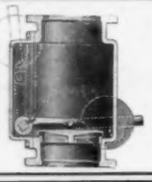
EAST LIVERPOOL, O.—It is stated that the school board is considering the erection of a high school, to cost between $50,000 and $75,000.

FAULKTON, S. D.—Preparations are rapidly being completed for the erection of the new $50,000 county courthouse building in this city.

FAR ROCKAWAY, L. I.—Plans have just been completed by Horgan & Slattery, New York, for a $50,000 cottage to be built on Reed's Lane, for F. Haberman, a wealthy manufacturer. Work will be begun early this spring. A building boom is being enjoyed here and upward of $150,000 worth of new buildings are in various stages of construction.

GALVESTON, TEX.—The Fellman Dry Goods Co., it is stated, will increase capi-

Continued on page xii.



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The American Architect and Building News

VOL. LXXXVII. SATURDAY, MARCH 11, 1905. No. 1524.

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EXHIBITIONS, ETC. . . . . IV.

"IN this scheme no consideration has been given to increased space within the building, and the problem has been solved strictly according to the architectural necessities of the case." A few years ago, no architect would have dreamed of including in a report to be considered by the Congress of the United States words so impolitic and so obviously showing incapacity for grappling with "practical" matters. That Messrs. Carrère & Hastings ventured to make this very frank, very truthful and wholly praiseworthy sentiment in the report they have just laid before the Joint Commission of Senate and House on the alterations it is desirable to make in the east front of the Capitol is a delightful proof of the assurance that so generally prevails that the most influential and intelligent Congressmen have at length acquired a fair perception that the most important of the conditions that architects have to consider and treat are not always the purely practical and economical ones. This waiving aside of practical considerations, which, probably, many Congressmen felt were the only ones that the consulting architects were appointed to deal with, can hardly prejudice the acceptance of the report which, because of its restraint and display of good sense, wins our hearty commendation.

IN place of seeking an opportunity to do something of overmastering prominence that should mark that portion of the building as unquestionably their work, Messrs. Carrère & Hastings have considered merely the "architectural necessities of the case." These necessities were simply two: first, to give proper apparent structural support to the base of the dome on its eastern side and, second, to add dignity to the central portico. Accordingly their plan brings forward the entire eastern wall of the main building only twelve feet and ten inches, to satisfy the first requirement, while the conversion of the central porch from an octostyle to a decastyle one provides for the second one, both alterations being very simple, very effective and very inexpensive, three very good reasons that ought to have weight in discussing action on the report. Besides these things the architects recommend that advantage of this opportunity should be taken to replace with marble the painted sandstone that still shows on the west front of the main building as well as on the east, the filling of the southeast pediment with sculpture so as to accord with the northeastern one and the replacing with white marble of the present treads of the great flight of steps leading from Pennsylvania Avenue up to the western terraces. Not the least satisfactory point in the report is the inclusion of an estimate of cost, covering all these changes, of considerably less than a million and a half of dollars. The architects also present an alternative design, as perhaps they were invited to do, showing what the effect would be if they should make their alterations with a view first to increasing the available floor-area of the building. In this design, the eastern wall is brought forward thirty-two and a half feet and the architects point out convincingly how detrimental to the general effect any such enlargement would be.

VERY interesting "hearings" have been had recently before the Committee on Cities of the Massachusetts Legislature on the proposed law for the abatement of smoke in the city of Boston and vicinity. The proposed law was first introduced in 1902, but its sponsors only succeeded in having it referred to the next General Court, before which, however, it was not brought, because of the obvious impolicy of urging such a measure during the distress occasioned by the great coal strike of that year. The wisdom of bringing up the measure again cannot be questioned, since the atmospheric conditions have not returned to the state of cleanliness normal before the strike. The proposed measure is very simply expressed: it prohibits in any town situated in whole or in part "within ten miles of the State-house"—thus including the real metropolitan area which covers the city of Lynn on the north as well as the city of Quincy on the south—discharge of "dark smoke or dense gray smoke." The enforcement of the law is left to the boards of health of their respective communities who may proceed by injunction procured from a justice of the Superior or the Supreme Court and secure the infliction on the offender of a fine of one hundred dollars per week. If passed, the law is to take effect on January 1st, 1906, and possible violaters may secure a further exemption of six months' time during which to reform their apparatus and methods of firing.

IN all probability no perfect cure for the smoke evil can be had, short of the universal adoption of fuel-gas or the establishment of central heating-plants, such as is under discussion for the government buildings at Wash-

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ington, where apparatus can be installed and handled scientifically, regardless of expense. Perhaps either solution may be brought about by law; but most of us can quite understand the Englishman's toleration of the London fog, if a clear and healthful atmosphere can be had only through the abandonment of his cheery open fire, and so, in our own case, prefer to await the compulsion of a definite law. The practical difficulty is that each center of smoke-emission constitutes a distinct and separate problem, and the solution for it cannot be bought off-hand and ready-made at the nearest stove-dealer's. Hence a law which should order the use of a given mechanical-stoker or the adoption of a stated form of furnace would defeat its own ends and cause needless waste of money in the process. A smoke-preventing law must be elastic, and the one before the Massachusetts Legislature seems to meet the situation in that respect, since it only says: "Stop the smoke in any way that you can, but stop it." It leaves the matter of enforcement in as proper and competent hands as any that can be thought of; it allows the members of the Boards of Health to use their own common sense and does not hamper them with such restrictions as were contained in a certain Philadelphia law which established a "color scale," Number One consisting of one thickness of gray glass and Number Two of four thicknesses which were to be used as gauges under certain circumstances described in the law. One thing, at least, should be insisted on by sane communities and that is that every furnace hereafter built in which soft coal is to be burned shall be equipped with a smoke-consuming device approved by the local board of health.

AT one time or another, in books dealing with China or in commercial reports, we have come upon references to "wood-oil" as an important product of that country, but no clue was ever given as to its derivation or use. A consular report by the vice-consul at Hangchau on "Ningpo varnish," which mentions wood-oil once more, sends us at last to the dictionary which discloses the fact that one kind of wood-oil, "gurjun," is derived from a large tree common in the Philippine Islands, where it is used as an ingredient of coarse paints, as a substitute for tar in pitching boats and as a timber-preservative against white ants. Another kind of wood-oil, "tung oil," is produced in immense quantities in China where the demand for it is so great that the article is unknown to European commerce, and this is regrettable, for it seems to have unusually desirable qualities; for instance, it is said to surpass all other known oils in its drying qualities which make it of the utmost value for calking and painting, or rather varnishing, the universal sampan and junk. It is not supposable that wood-oil is wholly unknown in the laboratories of our varnish-makers, but if it should chance to be, then the fact would form another argument in favor of the "open door."

NINGPO varnish, according to Vice-Consul Cloud, is, from the architect's point-of-view, an even more desirable article to have on the American market, for it has in China, where the knowledge of varnishes and lacquers is profound, a reputation of the highest. A varnish that "does not scar easily and may be scrubbed with boiling water without the slightest injury to its high polish" is the very article that architects have bewailed the lack of when the finishing of the wood-work in bath-room, pantry and kitchen came up for consideration. Again, as the varnishing has to be done in damp weather, Ningpo varnish would seem to find a use in naval architecture. The desirability, perhaps the necessity, of using this varnish only in damp weather or a moist climate is due to the fact that its use subjects the workman to the risk of "lacquer poisoning," and this is not strange, since the sap from which the varnish is made is drawn from a species of ivy, the *Rhus vernicifera.* Once dried, there is no risk of poisoning to those who handle the polished surface. Apparently wood-oil and Ningpo varnish are two articles which ought to be within the reach of the American building fraternity.

WE have often wondered, as we passed along a hotel or office-building corridor, what would happen should we stop and open the valve behind a coil of reeled-up fire-hose. Apparently, it is not certain that anything would have happened had the temptation proved irresistible, for when, last week, a fire occurred in the great Exchange Building in Boston the employés naturally tried to extinguish it with their own apparatus, before calling in the public fire-department. So the hose was rapidly unreeled and the valve opened, while the amateur fireman baced himself to contend with the "kick" of the nozzle when the high pressure struck it. But nothing happened. Never a drop dashed from the carefully polished brass-work. When the real firemen had extinguished the small fire, investigation was had which revealed the fact that, though the great building had been built and occupied for a dozen years, the lower valve of the stand-pipe had never been opened for the admission of water from the street main. A fire in a fireproof building that causes a loss as reported, of several thousand dollars, is too common an occurrence, but the novel condition of this stand-pipe seems to us to reflect very disadvantageously on the thoroughness of examination made by the numerous inspectors of the Fire Department and the Board of Underwriters during the many visits they must have made to the building. Whether a hose be found on a "*General Slocum*" or in a "fireproof" building, inspectors seem willing to accept it, if only its nozzle be sufficiently shining.

COMPLAINTS are made in England that there are too many architects or—what is the same thing—too few jobs. In support of the well founding of the complaint is cited a town which, a few years ago, paid for the designing of its town-hall "the usual five per cent. to the architect and two and a half per cent. for the quantities," while it is now offering only five-and-a-half per cent. for both architectural service and quantities for the new school-house it requires. This way of putting the matter revives the impression that English architects must, because of the quantity-surveying system, net more from their five per cent. commission than do American architects under their system of procuring estimates.

"BE GENTLEMEN."

A SPECIAL committee of the Boston Society of Architects, consisting of Messrs. Robert S. Peabody, Edwin J. Lewis, Jr., and Frank A. Kendall, appointed to consider the annual report of the retiring Secretary, discuss its most important suggestions as follows:

THE proposed adoption of a mandatory inflexible standard of practice regarding the furnishing of sketches to prospective clients* is a far more puzzling question and it is evident that such action cannot be effective unless it has the endorsement and support of every member of the Society.

All of us have noticed that the number of competitions has increased of late, and that there is increased willingness on the part of architects to volunteer sketches without pay. This condition partly arises from dullness in business throughout the country, combined with a great increase in the number of practising architects that our many schools have trained. Is this condition hurtful or advantageous? Is it perhaps hurtful to the profession, though advantageous to the individual? If it is a trouble, can it be lessened? Will resolutions on the part of the Society bring about a better condition? These are the rather searching questions on which, as we understand it, you wish a report from us.

Why is it that we all think an architect is not all that he might be if he competes without compensation, or, what has a similar effect, if he cuts the usual rate of charges? There is nothing immoral about either of these things, unless while doing them one pretends that he does not do them. In what way, then, does an architect differ from the grocer who undersells his neighbor until his profit is of the slightest? In what respect is he like the doctor who does not do so? How does the doctor differ from the apothecary who does cut his neighbor's prices?

These are difficult questions to answer. They lead us to ask what is the real underlying principle on which the professional spirit is based, either in the three old-time "learned professions" or in those that are struggling for a place on a level with them. Is it perhaps based on the fact that professional men sell ideas instead of goods; not drawings but design; not sermons but good counsel; not medicine but sound advice? Is it perhaps founded even more on the fact that to professional men bread-winning, while it is a necessity of life, is not after all what gives them delight in the work each loves? Is it perhaps due to the leadership through intellect which should fall upon men in the professions?

We may not be able to state with exactness the reason why a high professional spirit actually exists among us, but the main fact is that happily it does so exist, and it exists also with strength and life, and we all, young and old, feel and prize it. It does not matter on what reasons it rests. We have it and we want to nourish it and are willing to sacrifice for it, believing, too, that such sacrifice results in ultimate gain. Dignity does not come without some such sacrifice. *"Noblesse oblige,"* and "hustling" is not consistent with the truest dignity. To abstain from improper conduct is not only the price of a dignified position, but is a part of it. How far, then, should this professional spirit prevail among us in opposition to commercialism? What can the profession do about this whole subject?

Is not our position towards the public essentially that of a doctor towards his public, which is thus stated in the Medical Code of Ethics: "The relation of practitioners of medicine to families and households is not like that of tradesmen to their customers. The kind of competition which might be considered honorable in business cannot exist between physicians without diminishing their usefulness and lowering the standard of the medical profession." "In his relations with another medical practitioner and his patients a physician should be governed by strict rules of honor and courtesy. His conduct should be such as, if universally imitated, would insure the mutual confidence of all medical practitioners." This surely applies in all respects to our own profession, and in great measure covers the subject under discussion.

The resolutions that are suggested by our ex-Secretary properly indicate that the point of view of a youth and an older man may fairly be different. The youth wants to get started and sets less store by dignity than the older man. This difference must be reckoned with in any generous discussion of the subject. It is urged that a youth gains no recognition if he takes the same stand that may fairly be required of older men, but who can fairly say that in this day and country? You have but to look around to see large numbers of young school graduates, Fellowship men and Rotch scholars, gaining prompt praise and reward for work obtained in legitimate ways. The public is always seeking the best. Certainly we should be in the wrong, if our professional habits and customs bar out youth. But we do not think that is the spirit of the profession. Our sympathies are heartily with eager and accomplished young architects. We recognize their difficult questions as to conduct. The question of conduct is perhaps never harder than when a young man, thinking he has some work well in hand, is told by his committee that older men are clamoring to present sketches without pay and that he must do likewise or lose his work. Our sympathies, it is unnecessary to say, are not with the architect who thus gets ahead of him. Still your committee cannot accept the position urged by the resolutions —that there may be a period of probation during which youth may properly sow wild oats regardless of the interests of others and of his own ultimate interests. Youth should await opportunities that may be seized upon with reasonable dignity. Surely the only proper attitude towards these matters is one that is proper for all.

Nor does your committee believe that this is a matter that can be regulated by vote of the Society. Certainly such a vote cannot bind a dissenting minority. It is true that the consent of every member might possibly be obtained, or a new association might be formed which would accept certain obligations as to competitions and sketches and rates of compensation, but such a combination or trust would excite grave criticism from the public, and would surely be defeated finally by one or more architects who would not join the trust, or by invaders from other cities. Your committee believes that any such *trust* is as undesirable as the scramble which it is meant to remedy is undignified. They believe that these troubles will continue to a greater or less degree as long as business is a matter of competition instead of co-operation.

In short, your committee does not believe that you can suppress selfishness by rules or bind architects, as the Secretary suggests, by a hard and fast resolution of the Society. The experience of every one of us shows that there are occasions when any individual would wish to break such a rule, and might do so with perfect self-respect and with the approval of his fellows. We cannot enforce observance of a rule that is more exacting than the profession at heart believes in, but we can urge on young and old that selfishness works to the general harm and is undignified and undesirable.

Your committee, therefore, believes that the only remedy for these evident evils is moral suasion. They think it cannot be too often said and repeated that a commission of 5 per cent. has been long agreed upon as a moderate bread-winning commission for work properly done; that a less charge is unremunerative; that a greater charge is perfectly proper for those whose skill makes them able to obtain it; that anybody who cuts these prices by lowering the rate is really breaking the lowest remunerative market price; that to volunteer, without pay, sketches and competition work is also practically cutting prices, as when a 5 per cent. commission was established as usual and proper for ordinary professional services it was never intended to cover expenditures for obtaining work; that if an architect does this, whether he is young or old, he will earn the name among his fellows of being unduly selfish. He will, in short, be a "hustler," and will have to take the odium that attaches to the name along with work thus gained. Young or old must be generous gentlemen, or else bear with others who find them selfish and greedy.

Practically, a code is complete when it says, "Be a gentleman always and in addition as good an architect as possible." That is the substance of the Attorney's oath or of the Medical Society's code. It is when we consider details that our troubles begin, and, in fact, the ultimate guide must always be one's own sense in each case of what is decent and proper. The man who respects himself will be the most respected, but a hard and fast rule as to these details cannot be made and will not be regarded.

Your committee believes in stating our belief regarding this whole matter as fairly and squarely as we can see it, rather than in shirking the truth as to our belief and our practice and leav-

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NOTE.—The suggestion made by our ex-Secretary was as follows:

I should like to find a general sentiment in the Society in favor of the following propositions:

"After three years of independent practice no member shall volunteer sketches or other professional assistance.

"No member shall furnish sketches without compensation unless assured that he alone will be invited or permitted to do so. If other sketches are received, he shall claim a proper payment, at least sufficient to cover the reasonable cost of his drawings.

"No member of the Society shall either personally or through another submit sketches, except as above, or in a proper competition (with professional adviser to assist in preparing the programme and judging the designs), or for an adequate payment according to the schedule of the A. I. A."

ing our position vague and unexpressed. In view, therefore, of what has been said, your committee recommends the omission from our Code of Ethics of Sections 5 and 10,* and the substitution therefor of the following, immediately before section which relates to underbidding other architects:

"SECTION —. This Society is not a trust or trade union, and does not fix rates of charges to be made by its members. It has, however, recommended to architects and to the public a schedule of charges that, through long experience, have been found to be the minimum rates that yield a reasonable profit. Any member whose skill permits him to obtain it may reasonably charge more. Those who charge less break the lowest remunerative price and act contrary to the interest of the profession, and in the long run to their own interest.

"The regular rates of commission do not cover competitive work to obtain employment. This should be paid for separately. If such work is done without charge the result is the same as the charging of less than the schedule rates and is in the same way undesirable and undignified. Such practices diminish the usefulness of architects as unprejudiced advisers and lower the standard of the architectural profession."

HEATING AND VENTILATION.[1]—III.

INDIRECT STEAM HEATING.

THIS system of heating, combines some of the advantages of both the furnace and direct steam, but is more expensive than either to install. The amount of fuel required is about the same as in the case of furnace heating. Instead of placing the radiators in the rooms, a special form of heater is supported at the basement ceiling and encased in galvanized iron. A cold-air box is connected with the space below the heater, and warm-air pipes are taken from the top and connected with registers in the floors or walls of the rooms, as already described for furnaces. A separate stack or heater may be provided for each register if the rooms are large, but if small and so located that they may be reached by short horizontal runs of pipe, a single heater may serve for two or more rooms. If this is done, that portion of the heater supplying each room should be separated from the others by galvanized-iron partitions, extending from the bottom of the heater to the top of the casing. Sometimes it is desirable to divide the cold-air space below the heater in a similar manner, when it is of considerable length and supplies several rooms.

The advantage of indirect steam over furnace heating comes from the fact that the stacks may be placed at or near the bases of the flues leading to the rooms, thus doing away with long, horizontal runs of pipe, and conteracting to a considerable extent the effect of wind pressure upon exposed rooms. Indirect and direct heating are often combined to advantage by using the former for the more important rooms, where ventilation is desired, and placing direct radiators in rooms which are more remote or where heat only is required.

Another advantage is the large ratio between the radiating-surface and grate-area, as compared with a furnace, resulting in a large quantity of air being warmed to a moderate temperature instead of a small quantity heated to a much higher temperature. This gives a more agreeable quality to the air and renders it less dry.

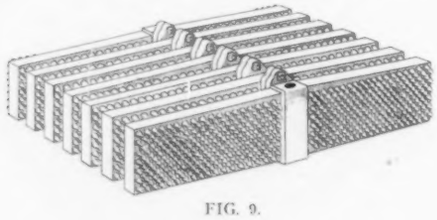


FIG. 9.

Indirect steam radiators are made of cast iron in many different forms, the most common of which is the "pin" radiator, one of which is shown in Fig. 9. They are made in sections or slabs, and a sufficient number of these are connected together to form a heater, or stack, having the required amount of heating-surface. There are several other similar forms, but the standard pin, rated at 10 square feet of heating-surface per section is probably as well adapted to house heating as any. In some patterns the sections are bolted together and in others they are connected with special nipples.

A very efficient form of indirect heater may be made up of wrought iron pipe joined together with branch tees and return bends. A heater of this kind is called a "box coil," and its efficiency is increased if the pipes are "staggered," that is, if pipes in alternate rows are placed over the spaces between those in the rows below. They are commonly made six or eight pipes deep and of sufficient length and width to give the necessary heating-surface and area for air flow between the pipes. It is common to consider one-half the "over all" area of the heater as free for the flow of air between the pipes. The free area between the sections of a standard pin radiator is about 36 square inches.

The casings around the stacks are of galvanized iron, made up in sections by means of small bolts so they may be easily removed for access to the heater in case of repairs. Large stacks are sometimes enclosed in brickwork, built up from the basement floor. The sides of such casings are made 8 inches in thickness, and the top is covered over with a layer of brick and mortar, supported on light wrought-iron tee-bars. Blocks of asbestos or magnesia are sometimes used for the covering instead of brick, and the whole covered over with plastic material of the same kind.

When galvanized-iron casings are used the stacks are supported by hangers attached to the floor joist above by lag-screws. Pieces of pipe or light iron bars are run through loops at the lower end of the hangers and the heater sections placed upon them. Where brick casings are used, the heater sections are supported upon pieces of pipe or small I-beams built into the walls.

The warm-air space between the top of the heater and the casing should never be less than 8 inches, while 12 inches is preferable for heaters of large size. The cold-air space may be an inch or two less, but if there is plenty of room it is good practice to make it the same as the space above. Figure 10 shows a

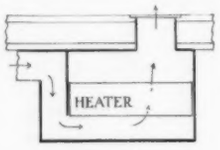


FIG. 10.

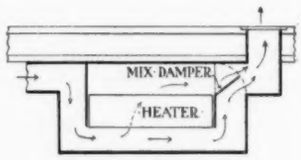


FIG. 11.

section through a stack and casing arranged for introducing warm air into a room through a floor register. The cold-air box is seen at the bottom of the casing, and the air in passing through the spaces between the sections becomes heated and rises through the register to the room above.

With this arrangement there is no way of regulating the temperature of the room except by closing or partially closing the register and thus shutting off the air supply. Figure 11 shows a heater equipped with a mixing damper, a device for regulating the temperature of the air entering the room without diminishing its volume to any great extent. The cold-air duct is brought along the basement ceiling from the inlet window and connects with the cold-air chamber beneath the heater. The entering air passes up between the sections and rises through the register above, as shown by the arrows. When the mixing damper is at its lowest position all air reaching the register must pass through the heater, but if the damper is raised to the position shown, part of the air will pass by without going through the heater, and the mixture entering through the register will be at a lower temperature than before. By changing the position of the damper the proportions of warm and cold air delivered to the room can be varied, thus regulating the temperature.

The objection to this form of damper is that there is a tendency for the air to enter the room before it is thoroughly mixed;

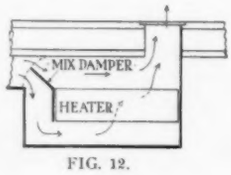


FIG. 12.

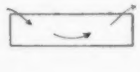


FIG. 13.

*Section 5 now reads:
Section 5. It is unprofessional to offer drawings or other services on approval and without adequate pecuniary compensation.
Section 10 now reads:
Section 10. It is unprofessional to furnish designs in competition for private work or for public work, unless for proper compensation, and unless a competent professional adviser is employed to draw up the "conditions" and assist in the award.

[1]Continued from page 58, No. 1521.

that is, a stream of warm air will rise through one-half of the register while cold air enters through the other. This is especially true if the connection between the damper and register is short, as must necessarily be the case with rooms on the first floor. The arrangement shown in Figure 12 is somewhat different, and overcomes the objection noted in Figure 11 by substituting another. The mixing damper in this case is placed at the other end of the heater. When it is in its highest position all of the air must pass through the heater before reaching the register, but, when partially lowered, a part of the air passes over the heater and the result is a mixture of cold and warm air, in proportions depending upon the position of the damper. As the layer of warm air in this case is below the cold air, it tends to rise through it, and a more thorough mixing is obtained than is possible with the damper shown in Figure 11. One quite serious objection, however, to this form of damper is illustrated in Figure 13. When the damper is nearly closed so that the greater part of the air enters above the heater, it has a tendency to fall between the sections, as shown by the arrows, and, becoming heated, rises again so that it is impossible to deliver air to a room below a certain temperature. This peculiar action increases as the quantity of air admitted below the heater is diminished. At best, a mixing damper is far from being a perfect device; but, if well made, it is much better than nothing, and, although producing cold draughts to some extent in windy weather, it may be made to give quite satisfactory results.

Special care should be taken to make these dampers tight against leakage; they should work easily and close tightly against smooth flanges. They may be operated from the rooms above by means of chains passing over guide pulleys, and should be rigged so as to maintain any desired position.

The efficiency of an indirect radiator depends upon its form, the difference in temperature between the steam and the surrounding air, and the velocity with which the air passes over it. Under ordinary conditions in dwelling-house work, a good form of indirect radiator will give off about 2 B.T.U. per square foot of surface per hour for each degree's difference in temperature. Assuming a steam pressure of 2 pounds and an outside temperature of zero, we have a difference in temperature of 220 degrees, which, under the conditions stated, gives an efficiency of $220 \times 2 = 440$ B.T.U. per hour.

The principles involved in indirect steam heating are similar to those already described under furnace heating. Part of the heat given off by the radiator must be used in warming up the air-supply to the temperature of the room, and part for offsetting the loss by conduction through walls and windows. Where large quantities of air are warmed to a moderate temperature, as in schoolhouses, hospitals, etc., the heat required for these two purposes is computed separately and added together. In the case of a dwelling-house, the conditions are somewhat changed, for a room having a comparatively large exposure will, perhaps, have only two or three occupants, so that if the small quantity of air necessary in this case were used to convey the required amount of heat to the room, it would be necessary to raise it to an excessively high temperature.

The following simple rule has been found to give very satisfactory results in work of this kind, and is especially convenient in computing the radiating-surface for houses having both direct and indirect radiation:

Compute the surface for direct radiation by the methods previously given, and multiply the result by 1.5.

This is a common steam-fitters' rule, but is fully as satisfactory for this class of work as some of the more complicated methods.

In computing the size of boiler for a house warmed with direct and indirect radiation, multiply the "direct" surface by 225, the "indirect" by 440, add the results together and divide the sum by 8,000 times the assumed rate of combustion. Increase the result by 15 per cent., if the mains and returns are uncovered, and the final result will be the square feet of grate-area required.

The required size of the warm-air flues between the stacks and registers depends, first, upon the difference in temperature between the air in the flue and that of the room; and, second, upon the height of the flue.

In dwellings, where the conditions are practically constant, it is customary to allow 2 square inches' area for each square foot of radiation when the room is on the first floor, and 1½ square inches when it is on the second or third floor. The cold-air ducts supplying the stacks should be planned in a manner similar to that described for furnace heating. The air inlets should, when possible, be on the north and west sides of the house. The method of having a large trunk line or duct, with inlets on two or more sides of the building should be employed, if it can be conveniently arranged, and connections made between this and each of the stacks. The area of the cold-air duct for any stack should be at least three-quarters of the total area of all the warm-air ducts leading from it. If the duct is of any considerable length or contains sharp bends, it should be made the full size of all the warm-air ducts.

If a trunk line with two inlets is used, each inlet should be of sufficient size to supply all of the stacks.

The inlets should be provided with some form of damper or slide, outside of which should be placed a wire grating, backed by a netting of about ⅜-inch mesh. In dwelling-houses, vent-flues are sometimes omitted; here, the frequent opening of doors and leakage are depended upon to carry away the impure air. A well-designed system of warming should be provided, with some means for discharge ventilation, especially for bath and toilet rooms and also for living-rooms, where lights are burned in the evening. Fireplaces are usually provided in the more important rooms of a well-built house, and these are made to serve as vent flues. In rooms having no fireplaces, special flues may be carried up in the partitions in the same manner as the warm-air flues. The size in this case may be made 1½ square inches per square foot of radiation for rooms on the first floor, and 2 square inches for rooms on the second, which is the reverse of the warm-air flues.

This is because the velocity of flow depends upon the height of flue and is therefore greater from the first floor. The flues should be joined together in the attic and connected with a brick flue running up beside the boiler chimney. Quite satisfactory results may be obtained by simply letting the flues open into an unfinished attic or roof space and depending upon leakage through the roof to carry off the discharged air.

Inlet registers are placed either in the floor or in the base-board; sometimes they are located under the windows, just above the base-board. The object in view is to place them where the currents of air entering the room will not be objectionable to persons sitting near windows, etc. A long, narrow floor register, placed close to the wall in front of a window, sends up a shallow current of warm air, which is not especially noticeable to one sitting near it.

Base-board registers should be long and low so as to distribute the air as much as possible. The air in this case is delivered along the floor and, if used with a mixing damper set for cool air, may cause uncomfortable draughts about one's feet. In consulting with a number of engineers and contractors regarding the best position for inlet registers, the writer found them about evenly divided between floor and wall locations. It would seem from this that one may be guided somewhat by circumstances, and adopt either position as found most convenient. It is sometimes desirable to keep the floor free, on account of carpets and rugs, while in other cases it is difficult to reach wall registers with warm-air pipes of sufficient size, on account of the construction of the walls.

Registers are preferably placed near the outside walls, especially in large rooms. Warm-air pipes are commonly carried up to the second floor in inside partitions, but they may be run in outside walls, if covered with suitable insulating material. Hair-felt, often used for this purpose, is likely to be destroyed by vermin.

Vent registers should be placed in inside walls, near the floor.

Registers are made of cast-iron, brass and bronze in a great variety of sizes and patterns. The usual finish for cast-iron is black Japan; they are also finished in colors and electroplated with copper and nickel.

Floor registers should be of cast-iron or solid bronze, while plated ones are sufficiently durable for wall locations.

Floor registers are commonly set in metal borders; wall registers may be screwed directly to wooden borders or frames, to correspond with the finish of the room.

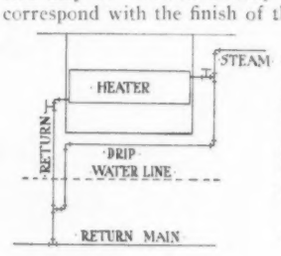


FIG. 14.

Registers with vanes or valves are used for air inlets, while plain register faces, without valves, are placed in the vent openings. The vent flues are usually gathered together in the attic, where a single damper may be used to shut off the whole system at once.

The grille, or solid part of a register face, usually takes up

about one-third of the area; hence, in computing the size, we must allow for this by multiplying the required net area by 1.5 to obtain the total, or over-all area. When a register is spoken of as a 10x12-in., or 12x16-in., etc., the dimensions of the latticed opening are meant and not the outside dimensions of the whole register. The free opening should have an area at least as large as the pipe with which it connects. In designing new work, one should provide himself with a trade-catalogue so as to use only standard sizes, if possible, as special patterns and sizes are expensive.

The two-pipe system, with dry or sealed returns, is used in indirect heating. The conditions to be met are practically the same as in direct heating, the only difference being that the radiators are at the basement ceiling instead of on the floors above. The exact method of making the pipe connections will depend somewhat upon existing conditions, but the general method shown in Figure 14 may be used as a guide, with modifications to suit any special case. The ends of all supply mains should be dripped and the horizontal returns should be sealed, if possible.

The pipe sizes for indirect heating are computed in a similar manner as for those for direct heating, except one square foot of indirect surface counts as two of direct. As indirect heaters are placed in the basement, care must be taken that the bottom of the radiator does not come too near the water-line of the boiler, or the condensation will not flow back properly; this distance should not be less than 2 feet under ordinary conditions. If much less than this, the pipes should be made extra large so there may be little or no drop in pressure between the boiler and the heater. A drop in pressure of 1 pound would raise the water-line at the heater 2.4 feet.

The following table of pipe-sizes has been computed upon the assumption that two-thirds of a pound of steam will be condensed by each square foot of radiating-surface, with a drop in pressure of one-quarter pound in each 200 feet length of run:

Size of pipe.	Square feet of indirect radiating surface which it will supply.
1	28
1¼	50
1½	67
2	185
2½	335
3	540
3½	812
4	1,140
5	2,030
6	3,260
7	4,830
8	6,800

CHARLES L. HUBBARD.

(To be continued.)

A FEW WORDS TO STUDENTS.[1]

SO I say to you, my youthful fellow-students, steer an even keel, if you can, between the Scylla of a superstitious and sentimental regard for the past and the Charybdis of a contemptuous indifference to all its works. If an example is merely old, leave it alone; if it is artistically good, approach it with all reverence and, examining its structure within and without, endeavor to discover the secret of its charm, even as a bee extracts the honey from the flower. Do not make the mistake of supposing that you will necessarily be able to define the exact nature of the secret.

There are principles of architecture as absolutely reliable and yet as vague and ill-defined, as much "in the air," if you will allow the expression, as the laws which govern musical progressions or the methods which underlie true literary form. In no one of these cases can the subtile secrets of the art be distilled in the form of express and mechanical rules. If we desire that our own powers may be moulded and guided on true lines, we must, as it were, live in the storehouses, continually absorbing the spirit of the masters as embodied and expressed in their works. Centuries of experiment and criticism, generation after generation of trained perceptions and cultured intelligence, have gone to determine what is good, what is beautiful, what is true. Shall we throw away the results of all this? Rather let us recognize and admit that our knowledge should be based upon the experience of those who have gone before, and our taste trained and refined in the study of the cultured monuments of the past. . . .

In all good work we shall discover a perfect blending of science and art, so combined that it is impossible to say where the one ends and the other begins. Where these are divorced there can be no true architecture. . . .

Examine the methods of support and resistance, not thinking of only what is necessary, but also how it satisfies the eye. Discover the scientific and mathemtaical problems which have been successfully worked out. Yet do not even in thought separate the science and the art of the building—the two are conjoined, and must be studied together and simultaneously.

In our own experience we find cases where we are much more impressed by the constructive beauty of a building than by any other feature in it. So there is an order of mind to which power and fitness of purpose appeal with unusual force, just as, again, a mathematical mind finds a fascination in the treatment of solids and voids, and of superincumbent masses.

The building must be solid and strong as well as graceful and pleasing. Stability is demanded no less than beauty. In fact, good construction, including the right use of materials, is a prime essential and foundation of all excellence in architecture. Nowhere, I think, is this more forcibly demonstrated than in the career and work of Sir Christopher Wren, who, both by education and the bent of his youthful genius, seems rather to have been of the scientific and mathematical than of the artistic order of mind. Though, like all educated men of his day, he took an intelligent and cultured interest in architecture, he received no special training for such work. Wren took his degree at Oxford at the age of eighteen, became a Fellow of All Souls' at twenty-five, and three years later was made a D.C.L. of Oxford and an LL.D. of Cambridge. Obviously it was not upon the ladder of architecture that he rose to these distinctions. As a matter of fact he was professor of astronomy at Gresham College, and in mathematics and astronomy he acquired for himself a European reputation. He was also President of the Royal Society in 1680. I have adduced these facts to show that though he undoubtedly possessed a very wide range of general knowledge, and was endowed with natural gifts of a wonderfully high order, all these were, in the early part of his career, directed to the practical side of life rather than to the artistic. His art was dormant; it was there, however, and he sometimes gave the rein to it a bit, for he is said to have invented mezzotint, or at least some improved method. It is interesting to speculate what it was that finally drew all his wonderful gifts and powers into the service of architecture. Whether the determining impulse came from within or without—probably a bit of each—I cannot doubt that it was the scientific or constructive side of architecture that attracted him in the first instance and that led him to accept an appointment as Assistant Surveyor-General of His Majesty's Works.

The first important work entrusted to Wren in his new office will serve to indicate, not only the natural bent of his mind, but also the official appreciation of it on the part of the authorities. He was set to examine and report upon St. Paul's Cathedral, which it was feared was in a dangerous condition. It is evident from the report that he did his work thoroughly—the very first thing he did was to measure the whole building carefully—and the insight and experience that he thus gained in constructive work stood him in good stead afterwards. With respect to the roof he says: "It is evident by the ruin of the roof that the work was both ill-designed and ill-built from the beginning—ill-designed because the architect gave not abutment enough to counterpoise and resist the weight of the roof from spreading the walls. . . . This also may be safely affirmed not only by an architect taking his measure from the precepts and examples of the ancients [you see he advocated this], but by a geometrician (this part being liable to demonstration), that the roof is and ever was too heavy for its abutment; for the eye alone will discover to any man that those pillars, as wide as they are, even 11 feet diameter, are bent outward at least 6 inches from their first position. . . . The bending of the pillars was facilitated by their ill-building, for they are only cased without, and that with small stones. . . . but within nothing but a case of small rubbish stones and much mortar which easily crushes and yields to the weight."

Good old times those! Jerry-building is obviously not a very modern institution. Then, too, Wren's first problem in building was a constructive one, for in the wonderful roof of the Sheldonian Theatre at Oxford, which has a span of 68 feet, the scien-

[1]Extracts from a lecture by Mr. John Belcher, A.R.A., President of the Royal Institute of Architects.

tific construction is masterly, and brought him great reputation. Two years later, viz., in 1665, occurred the Great Plague, and Wren took the opportunity to pay a visit to France to study architecture as a fine art. In Paris he studied all the principal buildings, and became intimate with the most celebrated artists there. He was introduced to Bernini, who showed him his designs for the Louvre, for which he says in his Notes he would have given his skin. The old Italian would not let him study it long, and he says he only had time to "copy them in his fancy and memory and shall be able by discourse with a crayon to give a tolerable account of it." He also studied Fontainebleau, St. Germain and Versailles. Of the last-named he says: "The mixtures of brick and stone, blue tile and gold make it like a rich livery—not an inch within but is crowded with ornament." Wren's own work was subsequently distinguished by its color effects and contrasts of texture. He adds, in the letter from which I have already quoted: "The women as they make here the language and the fashions, and meddle with politics and philosophy, so they sway also in architecture. Works of 'filgrand' and little trinkets are in great vogue; but building ought certainly to have the attributes of eternal, and is, therefore, the only thing incapable of new fashions."

These words coming from the man who advanced the architecture of the Renaissance to such a pitch of excellence and succeeded in establishing an English tradition, fine in type and grand in scale—the importance of these words, I say, as a guiding principle for the student cannot be over-estimated.

I hope I may be pardoned for quoting so freely from Wren, and for enforcing my points by the history of his career; but his methods of study and the line of his development are so clearly before us that I am sure we may draw many useful lessons and suggestive hints from them.

LOSS BY FIRE IN THE CONGESTED DISTRICT OF CHICAGO.

THE potentiality of Chicago's congested district in respect to damage by fire was illustrated so forcibly and frequently during the early months of the past year that people have become interested in the removal of the conditions which give rise to such disasters.

A conflagration is a large fire running amuck through the streets, and its possible occurrence becomes remote in proportion as the large fire becomes eliminated from consideration. Facts pertaining to the fire-history of congested districts are therefore of interest in selecting methods which have as their end the avoidance of the sweeping conflagration. It is the purpose of this article to present the more prominent aspects of the fire-record of the Chicago district, some of which have a direct bearing upon the problem of regeneration.

The term "congested" is applied in Chicago to the district bounded by Harrison street on the south, the Chicago River on the west and north and Lake Michigan on the east. It is divided approximately into 100 blocks, 400 feet square from center to center of streets. The aggregate area of lots is about 10,000,000 square feet, supporting 70,000,000 square feet of occupied floors. A considerable portion of the floor-area is devoted to public and semi-public uses: large retail and wholesale houses, office-buildings, old and new, and premises tenanted by miscellaneous traders and manufacturers constitute the remainder of the occupancy. The concentration of value is indicated by the insurance carried which is reported by the State Superintendent of Insurance to average $175,000,000 during recent years. Most of the floor-area is of ordinary construction, dating to a large extent from the Chicago fire.

Investigations of fire-losses deal with a darker Africa of research, and those of Chicago conform to the general rule. It is possible to compile the total losses and subdivide the total according to any desired classification, because each loss has been recorded in the books of the fire-patrol. On the other hand, very little can be obtained to establish the several values at risk which produced the losses.

In the case of automatic-sprinklers it is probable that the average value protected by one head is not less than $200, nor more than $300. This gives a clue to the aggregate value so protected since the number of heads in service may be readily ascertained. For the remaining classes of property, all that can be done is to make the best possible guess at amounts which shall total the $175,000,000 of insurance carried.

The most striking general aspect of the record is the paradoxical conjunction of a high rate of burning with the highest type of business ability in the occupants of the burned premises. Only firms of exceptional standing can maintain a foothold in the heart of a great city, yet some classes of business contribute more to fire-insurance and the direct out-growths of fire-waste than would suffice for the needs of all other benefits of civilization. The persistence of this condition, in the face of the recent advances made by the arts of fire-prevention and fire-protection, cannot be explained with credit to the interests concerned.

The grand total of losses upon which insurance was paid amounted, during ten years, to..... $11,345,000
During the first five years of the period the loss was.. 4,535,000
During the second five years of the period the loss was 6,810,000

This shows an increase of more than 50 per cent. in losses during the second period. By reference to the reports of the Superintendent of Insurance, it appears that the corresponding increase in value at risk was only 15 per cent. The second period was marked, therefore, by a great increase in the rate of burning. The losses which caused the increase, however, came largely from an unusual number of serious fires which may indicate fluctuation rather than growth in the rate of burning. The maximum susceptibility to damage is reached at the end of a seasoning process and large buildings are prepared for occupancy during "boom" years which occur in cycles. Consequently, it should result that the harvest of the fire fiend will encounter fat and lean years. The range of extremes during short periods of time is interesting:

The maximum loss one year was..... $2,247,000
The minimum loss one year was..... 480,000
The maximum loss one month was..... 880,000
The minimum loss one month was..... 25

On the contrary, the product of the number of fires is marked by comparative constancy:

The maximum number of fires one year was..... 125
The minimum number of fires one year was..... 85
The average number of fires for the first period of five years was 98
The average number of fires for the second period of five years was 107

Apparently, 50 fires may be expected each year from 1,000 buildings, due no doubt to the fact that most of the buildings contain more than one tenant. Several buildings so occupied caused five fires each in ten years, and one as many as seven. A map printed elsewhere in this issue has been prepared in which the location of each fire is shown by a dot of a size commensurate with the loss. The effect upon the eye is striking, and should convince the most sceptical that no construction or occupancy is immune from attack. The vagaries of hazard in this respect are well illustrated by the experience of a prominent business house, which had occupied a so-called "fire-trap" for many years without causing more than one mere false alarm. The growth of the business culminated in new fireproof quarters specially prepared for its needs. The change was celebrated by two fires within twenty months, one of which caused a loss of $33,000, chiefly in stock.

The preponderance of effect in the total of loss, due to a few large fires, has been frequently noted. The record of the district confirms this distinction:

	Number fires.	Loss.
Fires destroying $20,000, and less, total.....	90%	18.5%
Fires exceeding $20,000, and less, total.....	10%	81.5%
544 fires, $1,000 and less, averaged a loss of.....		$280
381 fires, $1,000 to $20,000, averaged a loss of.....		5,100
102 fires, exceeding $20,000, averaged a loss of.....		90,600
11 fires averaged a loss of.....		354,000

Thirty-four per cent. of the total loss was incurred in these eleven fires.

The direct source of the greater part of the loss is disclosed clearly by the classified experience of the years 1900, 1901 and 1902. It comes from buildings of large size, whose floors are framed with wood and are not protected by automatic-sprinklers, although provided with automatic hatch-doors, fire-alarms and the other simple expediments encouraged by ample credits in fire-insurance schedules.

The numerous old buildings of small size, occupied by tenants of little note, produce the most fires, but add only slightly to the total of loss. The elimination of the large fire, which is the recognized progenitor of the conflagration, depends almost wholly, therefore, upon the successful treatment of the comparatively few large buildings of inflammable interior construction from

which these fires emerge with substantial constancy each year. The experience of Chicago shows that this desirable end may be reached through the installation of automatic-sprinklers. In fact, the old combustible building of large area, filled with miscellaneous tenants but protected by sprinklers, shows a smaller ratio of loss than the modern buildings of fireproof construction but without such protection. The writer was informed by a prominent New York fire-insurance authority that this relation obtained also in that city. It need not be deduced that good construction is no longer economical in congested districts, but the enforced application of sprinklers in so-called "conflagration-breeders" may be advocated in behalf of public safety with full confidence that the result will justify the wisdom of the act.

The congested district is an affair of to-day. It is already built and full of spots which may incubate large fires. The heavy-walled fireproof congested district can only be attained through tearing down or burning down the existing buildings. Progress by these methods is very slow. Such a district does not arise at once, even when a conflagration offers the opportunity. The thorough application of the sprinkler, however, may be made by the present generation of business men, and they would be so applied at once if more attention were paid to economic facts and less to insurance-credits—which should not be viewed as true weights and measures in such a matter. The full economic worth of the sprinkler is shown by the classified experience. The contrast between the records of the ordinary and mill buildings, equipped and unequipped, challenges attention. The rates of burning of the unequipped property may be somewhat more or less than the figures given, bu the range of possible error in the case of sprinklers may be clearly defined by reference to th number of heads in service. The loss per head per annum was 6.6 cents on building and contents. If the value at risk per head was $200, the rate was 33 cents on the $100; if $300, the rate was 22 cents.

CLASSIFIED EXPERIENCE YEARS, 1900, 1901, 1902.

	Loss.	App. rate burning.	
Old style office buildings.....	$47,000	16 cts.	$100
Fireproof buildings	38,000	3 "	"
Contents of office buildings.....	40,000	13 "	"
Equipped fireproof buildings.....	No loss.		
Contents of fireproof buildings.....	No loss.		
Ordinary and mill buildings.....	680,000	95 "	"
Contents of ordinary and mill buildings	2,600,000	166 "	"
Equipped ordinary and mill buildings.	2,000	9 "	"
Contents of equipped ordinary and mill buildings	22,500	3.4 "	"

Note.—Exposure loss charged to point of origin = 6.50% of total loss.

The number of fires in the sprinklered buildings equalled the expected average of 50 per 1,000 per annum.

In the light of the above showing, some reference to the use of sprinklers should be formed in city ordinances. If the intent of the provisions to secure safety from fire is to achieve results, the one thing needful has been largely neglected. To illustrate: The Chicago ordinance prescribes an incombustible enclosure around passenger-elevator shafts in buildings of ordinary construction. The terms of the ordinance are retroactive, but do not apply to fireproof buildings. The wisdom of such enclosures in the fireproof building would be unquestionable, but their insertion in old buildings of ordinary construction is of doubtful utility. The closing of a hole in a tin pan might have an obvious significance which would be lacking in the case of a sieve. So long as the elevator-shaft or stair-well is handy, the fire invariably uses one or both in its ascent. In the absence of these facilities, however, it is almost equally prompt in passing right through the ordinary floor. Thus, an unfortunate owner recently enclosed the passenger elevator-shafts in an old building, as compelled by the city. To-day the enclosures form an additional item of loss in the general wreck caused by a fire. The remedy indicated by the symptom was clearly the sprinkler and not the elevator enclosure.

It requires merely a closer approximation to economic facts on the part of building ordinances and insurance schedules to secure not only comparative immunity from sweeping fire in congested districts, but also a great lessening of the annual burden which accrues from those of common occurrence.

HERMAN B. SEELY.

ILLUSTRATIONS

THE MAIN TOWER: BROADWAY TABERNACLE, BROADWAY AND FIFTY-SIXTH STREET, NEW YORK, N. Y. MESSRS. BARNEY & CHAPMAN, ARCHITECTS, NEW YORK, N. Y.

For plans and description, see the *American Architect* for February 18 last.

DETAILS OF THE SAME.

NORFOLK COUNTY REGISTRY OF DEEDS, DEDHAM, MASS. MESSRS. PEABODY & STERNS, ARCHITECTS, BOSTON, MASS.

A COMPETITIVE DESIGN FOR THE CARNEGIE TECHNICAL SCHOOLS, PITTSBURG, PA. MR. CALVIN KIESSLING, ARCHITECT, BOSTON, MASS.

FIRE MAP OF CHICAGO'S "CONGESTED DISTRICT."

This plate is printed in illustration of the article, "Loss by Fire in the Congested District of Chicago," elsewhere in this issue.

A COMPETITIVE DESIGN FOR THE CARNEGIE TECHNICAL SCHOOLS, PITTSBURG, PA. MR. B. F. WILLIS, ARCHITECT, YORK, PA.

Additional Illustrations in the International Edition.

GENERAL VIEW OF THE BROADWAY TABERNACLE, NEW YORK, N. Y. MESSRS. BARNEY & CHAPMAN, ARCHITECTS.

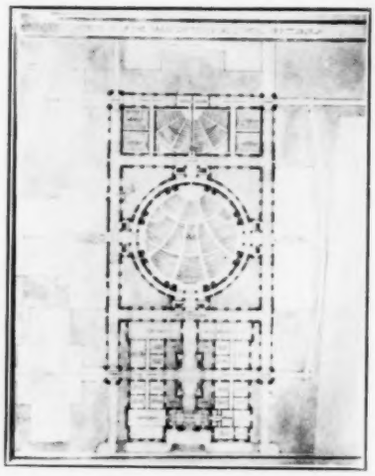
NOTES AND CLIPPINGS.

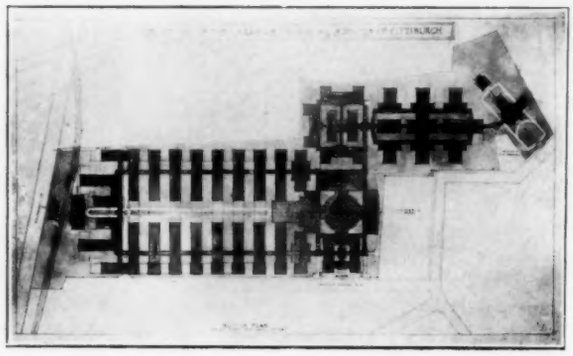
EBONY-GROWING IN CALIFORNIA.—It is now thought that ebony will grow in California, and some trees are to be taken there from Mexico, and an attempt made to grow them.—*Exchange.*

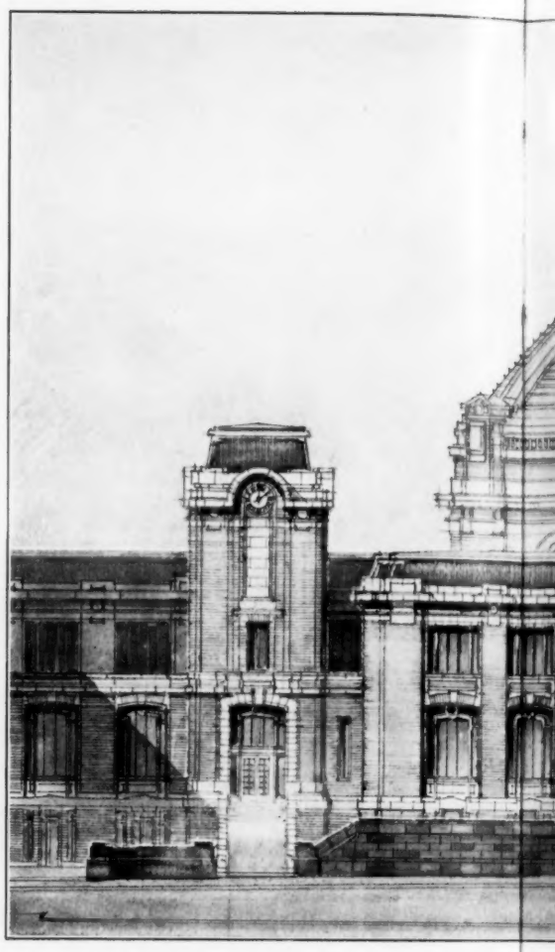
NATION GETS BACK BIG TREES.—The final steps in the recession to the Federal Government of the Yosemite Valley and the Mariposa big trees so far as California is concerned were taken, March 3, by Governor Pardee, when he signed the bill providing for the regrant.—*Exchange.*

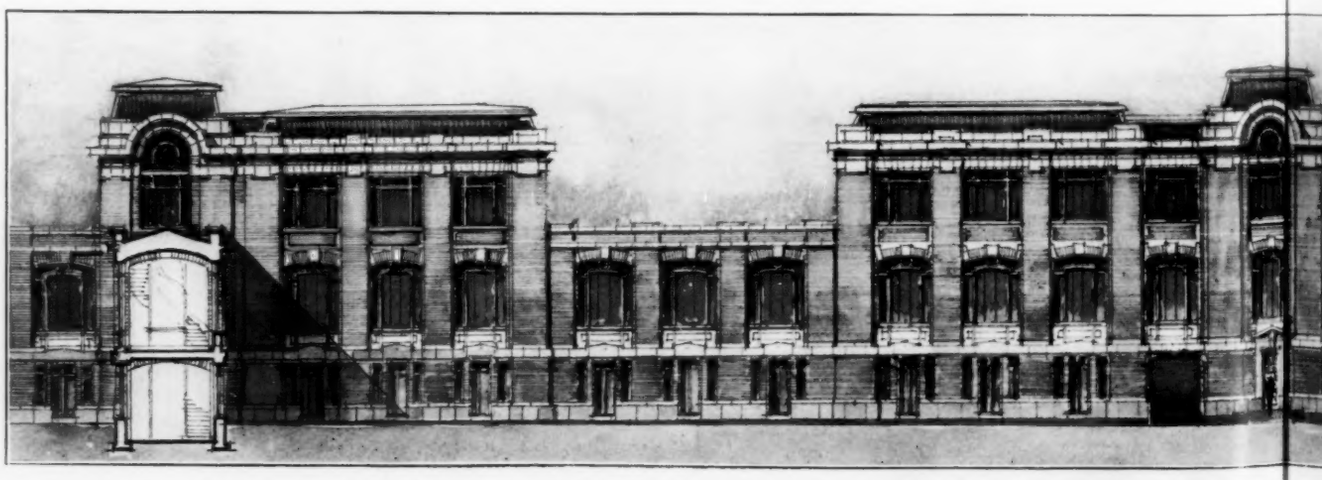
THE LAZARUS SCHOLARSHIP.—The Jacob H. Lazarus scholarship for the study of mural painting will be awarded next autumn by the Academy of Design for the fourth time. The winner will receive $1,000 a year and traveling expenses for three years, during which period he must work in Rome under the guidance of the Academy. The scholarship is open to any unmarried male citizen of the United States. Candidates must enter their names before October 1 next, and pass a preliminary examination in perspective, anatomy and painting from the nude; the final competition will be held in November, and the prize awarded in time for the winner to begin work in Rome in January. The Academy committee in charge of the matter consists of Frederic Crowninshield, J. Carroll Beckwith, Edwin H. Blashfield, George W. Breck, A. D. F. Hamlin, Francis C. Jones, George W. Maynard, A. T. Schwartz and Edgar M. Ward. Further particulars may be obtained from Philip C. Süs, clerk of the Academy, at Amsterdam avenue and One Hundred and Ninth street, New York City.—*New York Evening Post.*

PROPOSED MEMORIAL TO THE CHEVALIER ST. SAUVEUR.—Senator Prentiss Cummings's resolve for the appointment of a recess commission to consider a memorial to the Chevalier St. Sauveur is worth while passing, in order that the people of Massachusetts, and of Boston in particular, may learn something about the man to whom it is proposed to erect a monument. There are very few people in Boston who have ever heard of the Chevalier, and still fewer know why it is proposed to erect a monument to him. It is a question whether a commission would favor such a memorial, although unless one is erected the State will not be keeping its promise. The officer in the fleet of Count D'Estaing, who was injured by American citizens in an affray in this city September 16, 1778, and who died a few days later from his injuries, may not have rendered any great service to this country in the war for independence. Yet he was a Frenchman, an ally of this country in time of need, and his death, although never fixed upon anyone, was doubtless caused by American citizens. For this reason the General Court of Massachusetts passed a resolution for a memorial to him. Reasons of State are said to have led to a delay, and the promise has never been carried out. We doubt that Senator Cummings cares much whether a memorial is erected to the Frenchman or not, but he believes the Commonwealth should make its word good and keep its record clear. If a like idea of the integrity of the Commonwealth and the duty of its citizens actuated every lawmaker, we should hear little about "graft" in legislative councils.—*Boston Herald.*









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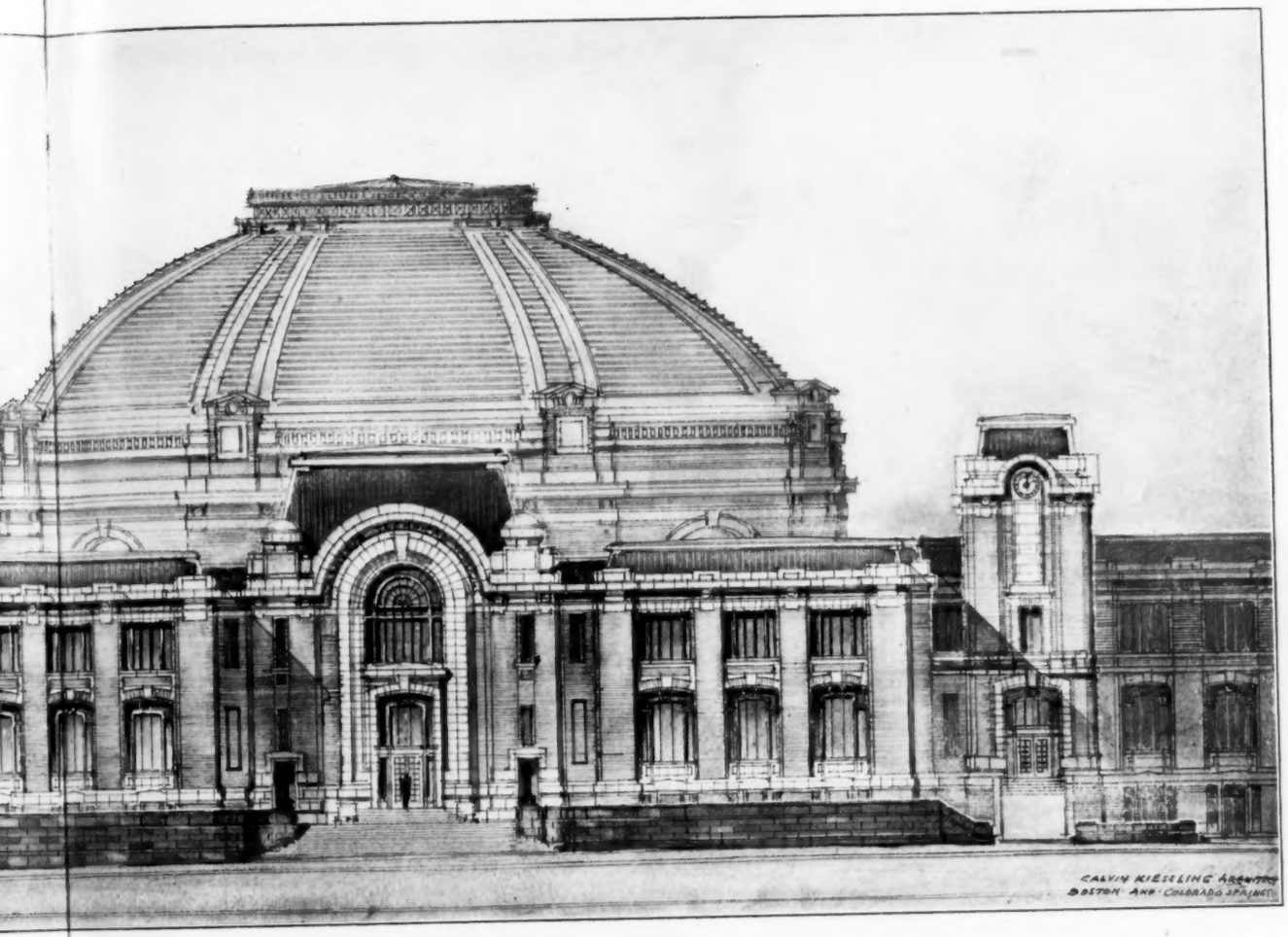

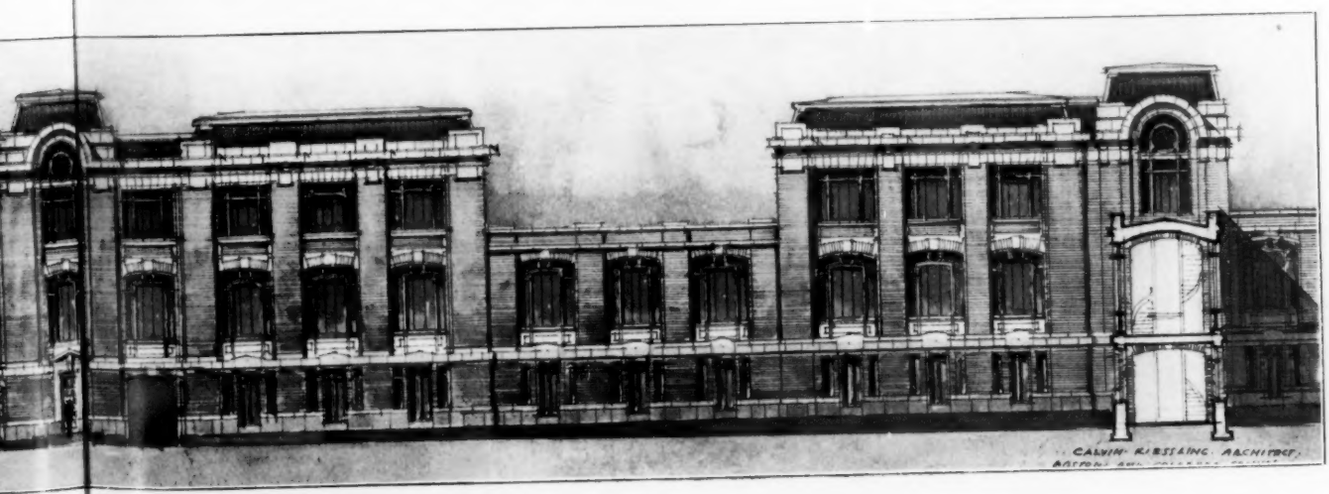

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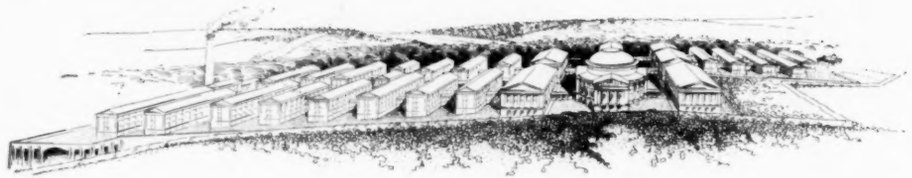

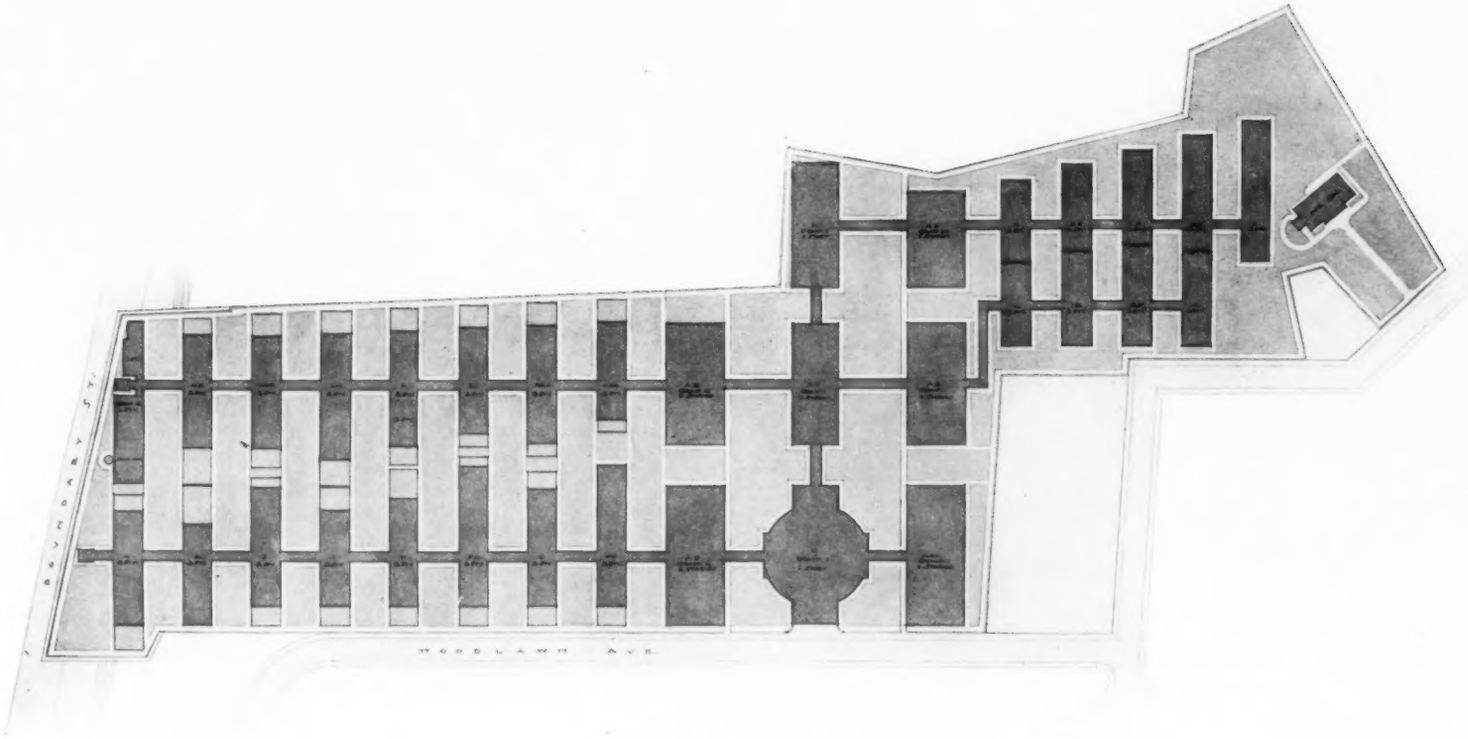

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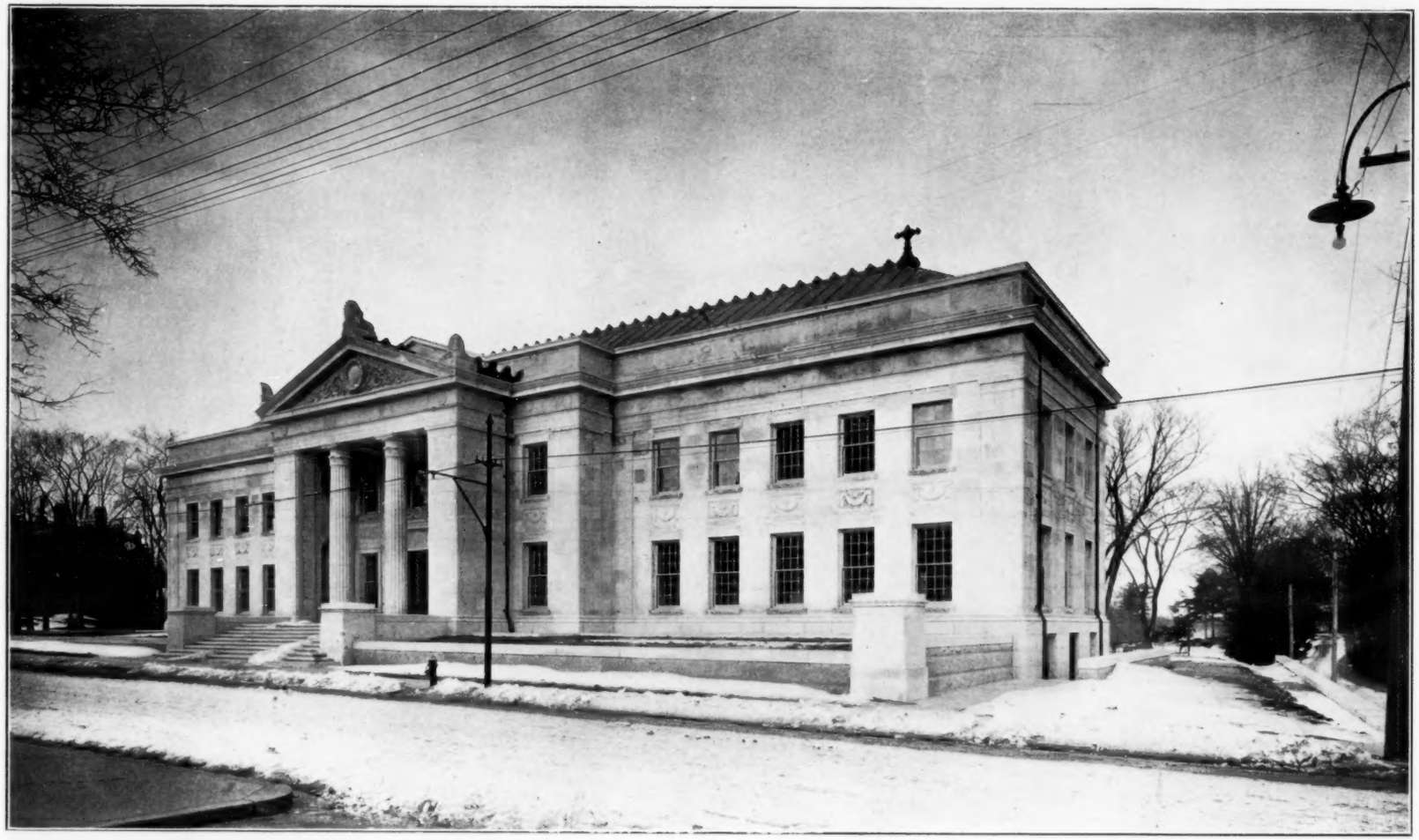

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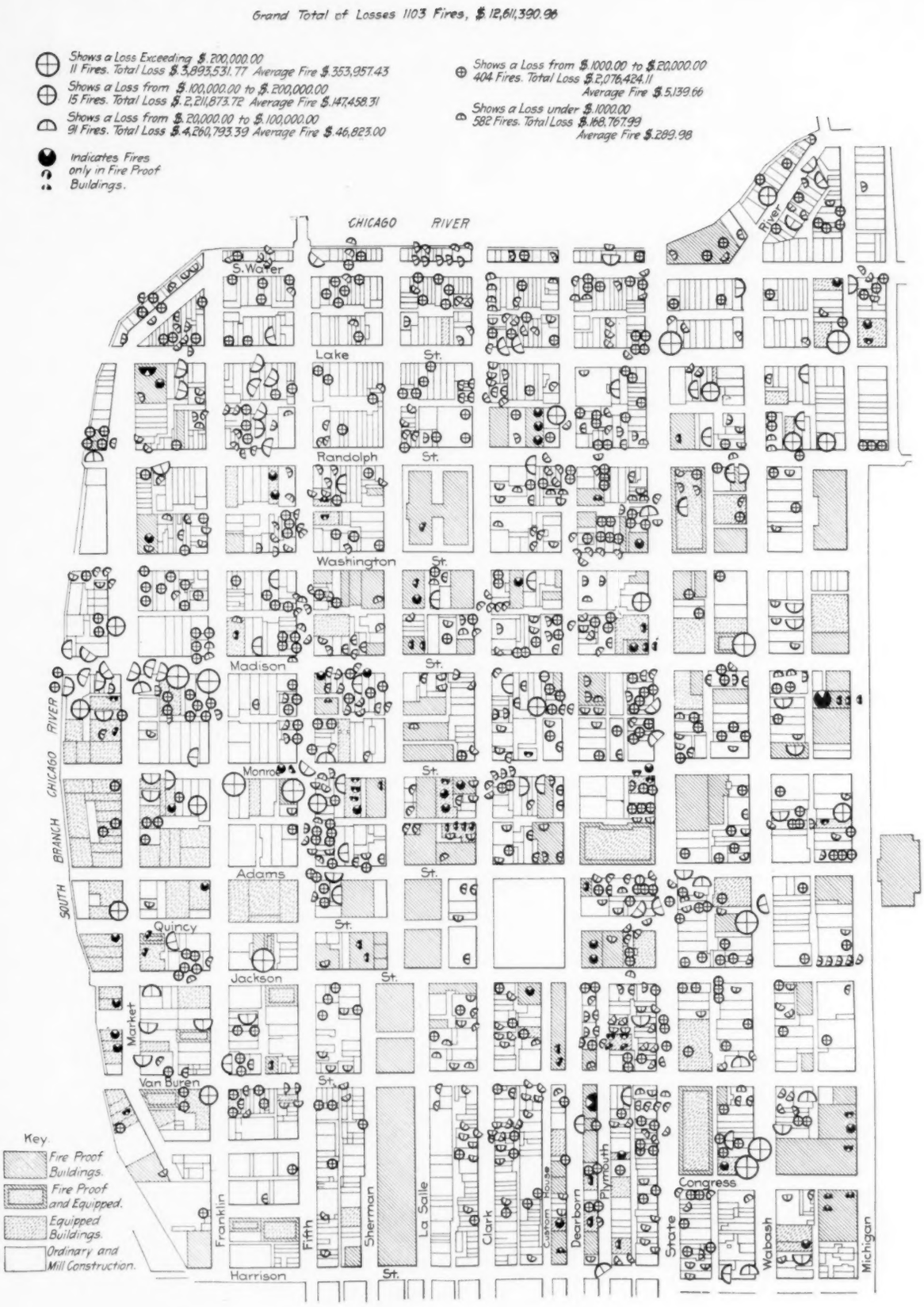

FIRE MAP OF CHICAGO'S "CONGESTED DISTRICT."

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MAIN TOWER: BROADWAY TABERNACLE, NEW YORK, N. Y.

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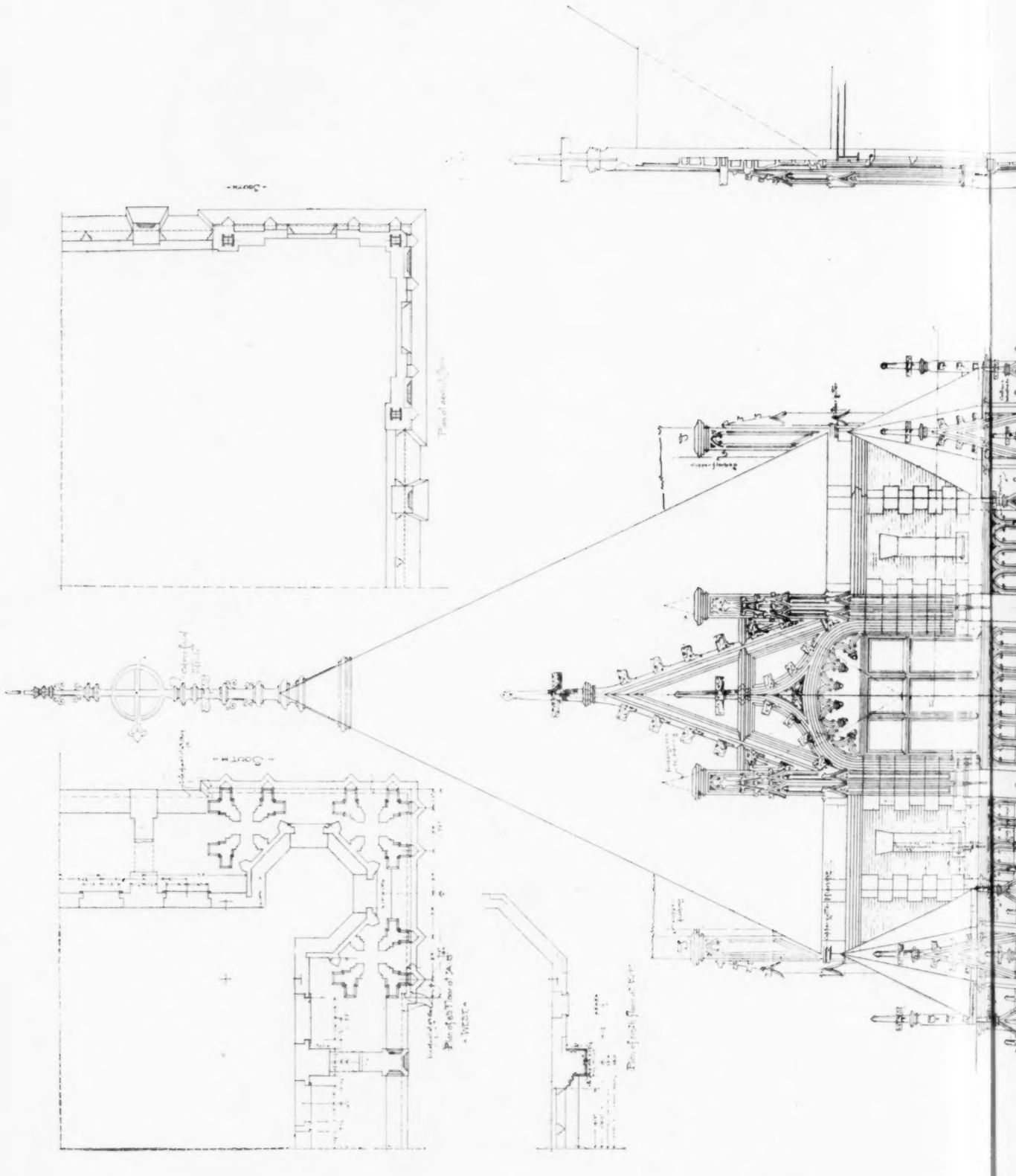

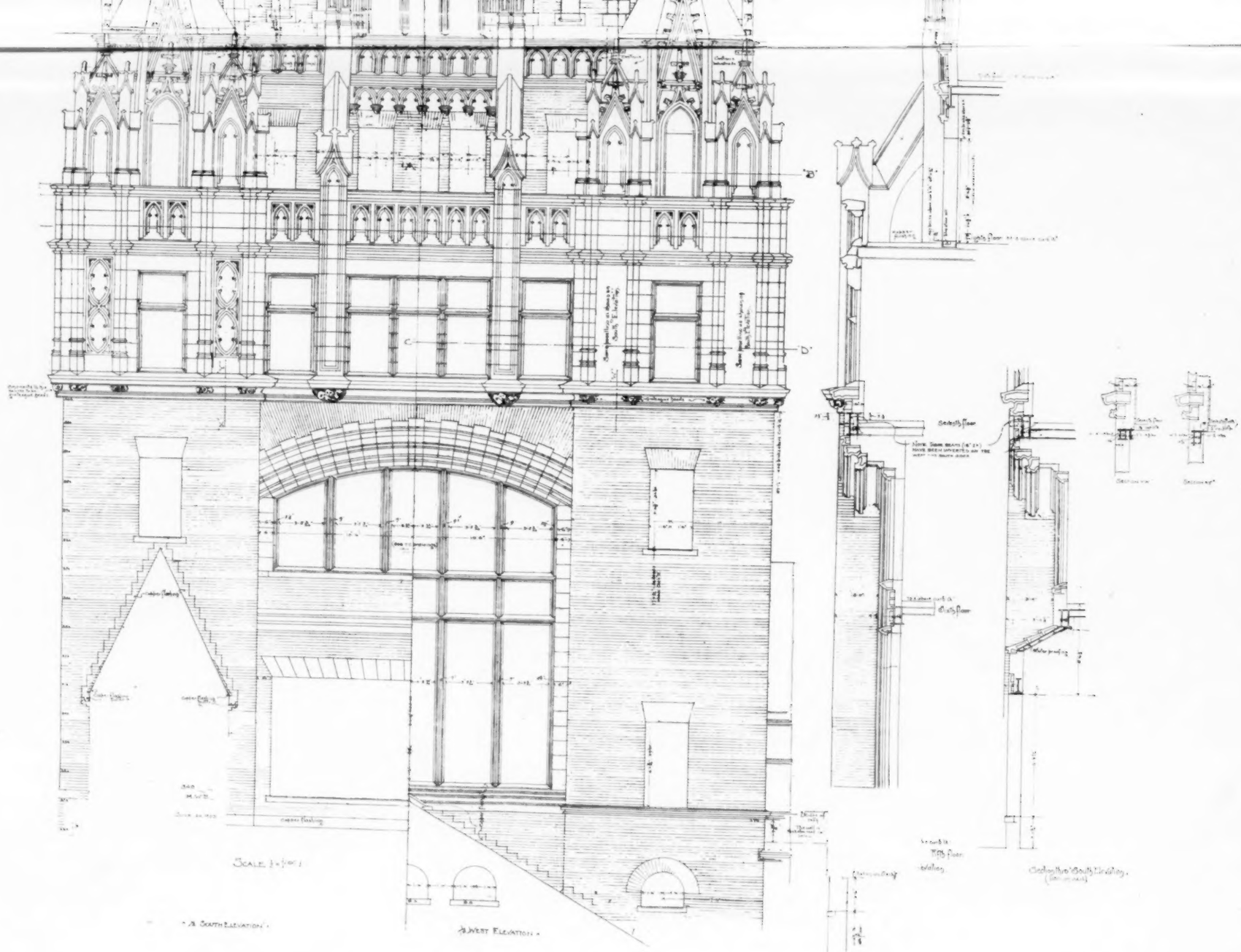

DETAILS OF MAIN TOWER: BROADWAY TABERNACLE, NEW YORK, N. Y.

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the office of the Postmaster at Marblehead, Mass., at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. (1523-1524)

Treasury Department, Office of the Supervising Architect, Washington, D. C., March 2, 1905.—Sealed proposals will be received at this office until 3 o'clock P. M., on the 30th day of March, 1905, and then opened, for the low temperature hot water heating apparatus, complete in place, for the U. S. Post Office and Court House at Waterloo, Iowa, in accordance with drawings and specifications, copies of which may be had at this office or at the office of the Superintendent at Waterloo, Iowa, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. (1524-1525)

Treasury Department, Office of the Supervising Architect, Washington, D. C., March 2, 1905.—Sealed proposals will be received at this office until 3 o'clock P. M., on the 25th day of March, 1905, and then opened, for the installation of an electric passenger elevator in the U. S. Court House and Post Office at Waco, Texas, in accordance with the drawings and specifications, copies of which may be obtained at this office, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. (1524-1525)

BUILDING NEWS.

Continued from Page ix.

tal stock from $100,000 to $150,000, and erect a store building.

Greenwich, Conn.—It is reported that the citizens have voted in favor of erecting a $100,000 high school building.

Hannibal, Mo.—Plans have been drawn by Barnett, Haynes & Barnett, St. Louis, for a 4-story hotel, to be known as the Mark Twain, and erected on Main St. Cost, $70,000.

Hot Springs, Ark.—More than 40 blocks were consumed by the recent fire at Hot Springs, and insurance men state that the loss will be a million and a half dollars. The devastated district will be speedily rebuilt. Property owners are already planning with architects.

Indianapolis, Ind.—The Van Camp Hardware & Iron Company have filed specifications for a new 8-story warehouse to be built at Missouri and Maryland Sts., at a cost of $300,000.

Indianapolis, Ind.—Plans have been drawn by Brown & Davis, Fosdick Building, Cincinnati, O., for a brick Baptist Church, to cost $100,000.

Ithaca, N. Y.—Bids will be received until April 3 by E. L. Williams, treasurer Cornell University, for constructing the N. Y. State College of Agriculture at the University.

Jersey City, N. J.—A new $150,000 playhouse, the third of a chain that will be owned and run by a new $500,000 corporation, the Klein Amusement Co., is to be erected on the west side of Grove St., between Montgomery and Mercer Sts., directly opposite the City Hall. Ground will be broken in the Spring and the new theatre rapidly pushed to completion.

Jamaica, L. I.—The new Otillie Orphan Asylum is to be built on the Lawson tract, opposite the Normal School, and will be a 2-story and basement structure, 175x75 feet, costing $100,000. The front will be of light brick and Indiana limestone and Warsaw bluestone. There will also be built on the same premises upon the completion of the asylum building a hospital, carriage house, stable and laundry.

Kansas City, Mo.—It is reported that the Kaw Land Co. will erect a 6-story brick building at 1108-10 McGee St., to cost $75,000.

J. C. Gates will erect a $75,000 building, 5 stories high, at 10th St. and Grand Ave.

Knoxville, Tenn.—Thos. H. Morgan, Atlanta, Ga., has prepared plans for a 10-story stone, steel and marble bank building for the Mechanics' National Bank, to be erected on Gay St. Cost, $200,000.

Kentland, Ind.—Bids will be received until April 3 by the County Commissioners for erecting a Courthouse, including plumbing and heating. Jos. T. Hutton, architect, Hammond, Ind.

Kansas City, Mo.—C. A. Smith, Dwight Building, has completed plans for the Humboldt school, to be erected at Eleventh and Holmes streets. Cost, $100,000.

Kansas City, Mo.—The Central Storage & Warehouse Co., $150,000 capital stock, has had plans drawn for a 5-story warehouse, 100 x 150 feet, to be built of cement and iron bars.

Little Rock, Ark.—A bill has passed the Senate appropriating $50,000 for a reform school.

Little Rock, Ark.—Report states that R. A. Furth is having plans prepared by Frank W. Gibb for a 4-story fireproof hotel to be erected at 109-111 Main street. Cost, $75,000.

Lynchburg, Va.—It is stated that the Geo. M. Jones Library Association will erect a $50,000 library building. Architect has not been engaged. Prof. I. L. Armstrong vice-president.

Lynchburg, Va.—The matter of a new city hall, to cost $100,000, is under consideration by the City Council.

The members of the Academy of Natural Science contemplate making an addition to their building at 19th St. Estimated cost, $200,000.

Los Angeles, Cal.—Report states that John C. Austin, Douglas building, has completed plans for a $50,000 detention hospital.

Latrobe, Pa.—Architect John T. Comes, Washington National Bank building, Pittsburgh, will receive estimates March 10 for a church for the Roman Catholic congregation of the Holy Trinity, at Walnut and Ligonier Sts. Cost, $65,000.

Los Angeles, Cal.—Plans have been drawn by John C. Austin, Douglas building, for a $200,000 hotel which is to be erected by Porter & Seemens.

Milwaukee, Wis.—A. C. Eschweiler, 141 Wisconsin St., is drawing plans for a 5-story brick and stone building which is to be erected by the Wisconsin Telephone Co., on 5th St. and Grand Ave. Cost, $300,000.

Madison, Wis.—Cass Gilbert, 79 Wall street, New York City, has submitted plans for a $250,000 high school, to be erected here.

Memphis, Tenn.—It is reported that Shelby County has adopted a resolution calling for the issuance of $1,000,000 of bonds for the erection of new courthouse. Address County Clerk.

Milwaukee, Wis.—A $75,000 apartment house is to be erected at Wisconsin and Cass streets, according to reports. For further information, apply to F. C. Courtenay.

Milwaukee, Wis.—The Milwaukee Medical Society has been raising funds and intends to build a $100,000 tuberculosis hospital.

Milwaukee, Wis.—The Wisconsin Telephone Co. will build a 5-story brick building on 5th St. Cost, $300,000.

Meridian, Miss.—Bids will be received March 20 by the Meridian Terminal Co. for erection of a union depot, 45 x 200 feet. Probable cost, $200,000. Frank P. Milburn, Architect, Columbia, S. C.

Minneapolis, Minn.—Geo. Harrison will erect a 4-story apartment house at Mary place and Eleventh street, to cost $75,000.

Minneapolis, Minn.—We learn that a $75,000 building is to be erected for the boys' department of the Y. M. C. A., ad-

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joining the organization's main structure on Mary Pl. and 10th St.

MINNEAPOLIS, MINN.—The Pabst Brewing Co. contemplates the erection of a cafe building at 250-52 Nicollet Ave. It will be 3-story, costing $100,000.

MINNEAPOLIS, MINN.—W. J. Keith will erect at 1700 to 1710 Hennepin Ave. an apartment hotel of brick, steel and tile, costing $200,000.

MINNEAPOLIS, MINN.—It is reported that the Atlantic Elevator Company, of Minneapolis, has made arrangements for the construction of 29 elevators along the Soo road, from Thief River Falls, Minn., to Kenmare, N. D. These buildings will have a capacity of 50,000 bushels each and will be located at the stations the road will establish and name.

MONTREAL, QUE.—Report states that Henry Morgan & Co. have purchased property adjoining, and intend enlarging the Colonial House at a cost of $1,000,000.

MUNCIE, IND.—It is reported that Edw. B. Ball will erect a $75,000 residence.

MASON CITY, O. T.—O. T. Denison will build a sewer tile factory at a cost of $50,000.

MINNEHAHA, MINN.—A bill has been introduced in the State Legislature appropriating $100,000 for a building at the Soldiers' Home at Minnehaha for wives and widows of the soldiers.

MCKEESPORT, PA.—The George Hogg Company, Braddock, Pa., have the contract for a 4-story brick store building, 175x100 feet, to be erected for Charles Ruben at McKeesport, Pa. Fireproofing, steam heat, elevators, gas and electric lights. Cost, $150,000.

MCKEESPORT, PA.—County Commissioner James Evans, of Allegheny County, has plans ready for a 4-story brick block which he will build. Cost, $100,000.

MONACO, PA.—Architects Mueller & East, 48th St., have plans for a brick school building to be erected at Monaco. Cost, $30,000.

NASHVILLE, TENN.—The Hermitage and University Clubs are reported to have consolidated, and are contemplating the erection of a new $100,000 building.

NASHVILLE, TENN.—The trustees of the Roger Williams University are considering the rebuilding of the University, which was recently destroyed by fire.

NEWARK, N. J.—A site has been purchased by Geo. F. King, 745 Broad street, at Halsey and Warren streets, and he contemplates erecting a $50,000 apartment house.

NEW ORLEANS, LA.—The Scottish Rite Masons have purchased the Carondelet Street Methodist Church and will expend $50,000 in remodeling. Gus D. Levy, chairman Building Committee.

NEW ORLEANS, LA.—The Illinois Central Railroad announces that as soon as the ruins of the recent fire cool forces will be put to work to clear away the debris and Stuyvesant docks and elevators will be promptly rebuilt on a more elaborate and substantial scale than before. The fire loss was over $3,000,000.

NORFOLK, VA.—Ferguson & Calrow have drawn plans for a 6-story hotel, 50 x 125 feet, of brick and terra-cotta, with steel-frame fireproof construction, to be erected at Granby and Tazewell streets for a new corporation, at a cost of $125,000.

NEW YORK, N. Y.—We learn that W. R. H. Martin is to erect a 6-story hotel at the corner of 12th and Hudson Sts., for the accommodation of working girls. Plans by R. S. Townsend. Cost, $150,000. It will be of Colonial design, with facade of granite and brick with trimmings of terra-cotta. If successful, this structure will be the first of a chain of such hotels to be erected by Mr. Martin in the city.

A new concert hall and a 6-story apartment house are to be erected on the 16 lots recently acquired by Karnarik Bros., near the Lenox Ave. Subway, between 139th and 140th Sts.

NEW YORK, N. Y.—It is announced that three lots in Vesey St., Nos. 20, 22 and 24, facing St. Paul's churchyard, have been purchased by the Evening Post, on which will be erected a modern office building, especially designed for the accommodation of the paper. Work on the new building will begin May 1. Robert D. Kohn, architect.

It is stated that A. B. Kight will build a 6-story elevator apartment house on the north side of 70th St., 400 feet west of West End Ave.

The new Altman building to be erected on Fifth Ave., block from 34th to 35th Sts., will be eight stories high, with stone facade. Estimated cost, $2,500,000. Architects, Trowbridge & Livingston.

A 6-story office building is to be erected on the east side of Broadway from 72d to 73d Sts., by the City Investing Co.

Plans have been filed for alterations to the house of C. K. G. Billings, on the west side of Fort Washington Road, near 181st St. Guy Lowell, architect. Cost, $90,000.

NEW YORK, N. Y.—The Port Morris Market Co., a newly organized corporation, has bought a site in the Port Morris section of the Bronx for a big wholesale produce market. The ground is on 134th St., fronting the New Haven tracks. $750,000 will be invested.

NEW YORK, N. Y.—Edgar P. Holdridge has sold sixteen lots in 63d and 64th Sts., 200 feet in each street, east of West End Ave., for the Aldrich estate to a person who will build modern tenement houses on the site. The investment will aggregate about $500,000.

It is stated that Henry Corn has leased from the Goelet estate for a term of years the 6-story building at the southeast corner of 20th St. and Broadway, and the adjoining 4-story building in the street. He will add five stories to the corner building, and erect an 11-story structure on the street lot.

NEW YORK, N. Y.—Jacob Rothschild is to erect a 15-story commercial building, costing $300,000, on the site of the old Gebhard residence, corner of Fifth Ave. and 15th St., after plans by A. S. Gottlieb.

NEW YORK, N. Y.—Ground has been broken for the new building of the Manhattan Eye, Ear and Throat Hospital, in 64th St., between Second and Third Aves. According to the amended plans, the hospital will cost between $450,000 and $500,000, including the equipment and furniture. It will be built of Harvard brick.

It is stated that work is to begin at once on the new St. Columbia Chapel in connection with the Cathedral of St. John the Divine. It is the gift of Mrs. Edward King, and will cost $100,000, exclusive of the $750,000 for the choir and temporary work.

NEW YORK, N. Y.—A $300,000 7-story steel, brick and stone, combination theatre and office building, to cover a lot 122½x155 feet, on the east side of Broadway, midway

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between 6th and 7th Sts., is reported to be assured. It is to be known as the Majestic Theatre. Architect A. F. Rosenheim has prepared plans.

New York, N. Y.—Randolph Guggenheimer has purchased five brownstone houses, on plot 85x100 feet, in the rear of the Eden Musee. He intends erecting a 12-story business building.

New York, N. Y.—The Krulewitch Realty Co. have purchased the southwest corner of Broadway and 184th St., and will erect, it is stated, a 7-story elevator apartment house, 75x103 feet, on the site. Cost, $75,000.

It is reported that the Aldrich estate of 16 lots, 200x200 feet, in 63d and 64th Sts., near West End Ave., has been sold by E. P. Holdridge to a builder, who will erect tenements thereon, the investment aggregating $500,000.

New York, N. Y.—Report states that Henry Phipps has purchased a site at Sixty-third and Sixty-fourth streets and West End and Amsterdam avenues, and will erect ten model tenements at a cost of about $300,000. No plans have as yet been drawn for the buildings.

Oakmont, Pa.—Charles Bailey and others have organized a bank and propose to erect a building to cost $30,000.

Pittsburgh, Pa.—Property has been purchased, and it is stated that two new bath houses will be erected in the East End. One will be built by the Natatorium Company at Shady Ave. and Aurelia St., at a cost of $100,000, and the other on Flavel St., directly in the rear of the new East Liberty branch, Carnegie Library. The latter will cost $150,000, and F. W. Hanitch and Dr. J. Alfred Tucker, both of 352 Amber St., are interested.

Pittsburgh, Pa.—John McSorley has purchased a vacant lot at the corner of Maryland Ave. and Holden St. He will have plans drawn, it is said, for three 4-story brick apartment houses upon which it is expected work will be started during the coming spring. Outlay, $150,000.

Pittsburgh, Pa.—John McSorley is preparing to build three apartment houses in East End. Four-story, fireproof, brick and terra-cotta. Cost, $45,000.

Pittsburgh, Pa.—Bauer Brothers are considering plans for a big bakery at Ellsworth Ave., East End. Cost, $50,000.

Architects McCollum & Dowler, Bank for Savings building, are taking estimates on a 12-story hotel for the Hotel Annex Company to be erected at Penn Ave. and 6th St. Fireproof, elevators, steam heat, 250 rooms, hotel and bar fixtures. Cost, $250,000.

Pittsburgh, Pa.—Architect Simeon B. Eisendrath, Farmers' Bank building, is preparing plans for a 3-story brick and stone hospital to be erected by the Hebrew Ladies' Aid Society in Reed St. Cost, $60,000.

Joseph M. Craig, Columbia National Bank building, will build three brick produce commission houses at Pike and 21st Sts. Cost, $150,000.

Pittsburgh, Pa.—Thomas J. Reilly has the contract from Architects Carpenter & Crocker, Moreland building, East End, for a parish house and Sunday-school room for the Trinity Episcopal congregation, Sixth Ave. Three-story stone. Cost, $60,000.

Bids are being taken by Architects McCollum & Dowler, Bank for Savings building, on a 12-story annex to the Colonial hotel to be built by the Hotel Annex Company. Steel frame, fireproof. Cost, $250,000.

S. S. Marvin has commissioned Architects Ballinger & Perret, 1200 Chestnut St., Philadelphia, to prepare plans for a chocolate factory at Center and College Aves., East End. Cost, $75,000.

Architect F. H. DeArment, German National Bank building, has been selected to prepare plans for an addition to the Hotel Lamont, 349 Spahr St., East End. Eight stories, 120x147 feet, fireproof, brick and steel. Cost, $150,000. Addition will contain 160 rooms. J. T. Keil is owner and J. M. Arnold is proprietor.

Frank W. Hanitsch and Dr. J. Alfred Tucker have bought a site in Flavel St., East End, and will build a natatorium. Three-story brick, 50x60 feet, wing 45x85 feet for swimming pool, 250 dressing-rooms, etc. Cost, $100,000.

Pittsburgh, Pa.—Architect Charles Bickel, 524 Penn Avenue, is preparing plans for a 4-story brick hotel to be erected by Morris Baer in Liberty Ave. Cost, $30,000.

Pittsburgh, Pa.—The Salvation Army contemplates building a citadel downtown to cost $100,000. Address Colonel R. E. Holz.

Pittsburgh, Pa.—Architects Dean and Stophlet are taking estimates on an addition to the Twenty-first Ward Schoolhouse at Hamilton and Lang Aves. Three stories, eight rooms and public hall, steam heat, combination lights. Cost, $60,000.

S. H. McCain, Allegheny, Pa., has the contract from Architect S. C. Irwin, Publication building, Pittsburgh, Pa., for a 6-story brick, fireproof warehouse for the Somerfield Manufacturing Company, Second Ave. Cost, $50,000.

Architects Reiger & Currier, Dalmeyer building, are taking bids on remodeling the old Chronicle Telegraph building at 347 Fifth Ave. New floors, new plumbing, new partitions, decorating and frescoing, new front and store and office fixtures will be required. Cost, $80,000.

Pittsburgh, Pa.—William Robinson, Forbes and Oakland Aves., will build 34 houses. Cost, $125,000.

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PITTSBURG, PA.—F. C. Saur, Hamilton Building, is drawing plans for the building to be erected at Shady avenue and Aurelia street for the Natatorium Co. Cost, $100,000.

PHILADELPHIA, PA.—A project is on foot to erect a theatre, to be known as the Florence, at the northwest corner of Lancaster and Fairmont Aves. Anatole B. Dennes represents the syndicate. Construction will be fireproof.

The cornerstone of the clubhouse for Philadelphia Lodge No. 2 of the Order of Elks, to be erected at the corner of Arch and Juniper Sts., will be laid on March 15. The structure will be three stories high, with Indiana Limestone façade, 40x120 feet in dimensions, and will cost in the neighborhood of $100,000.

PRINCETON, N. J.—It is announced that Princeton University is to have a new recitation hall, costing $100,000. It will be in the same style of architecture as the other recent buildings on the campus—Gothic. Work will begin in the Summer. Names of givers are withheld.

POCANTICO HILLS, N. Y.—It is reported that John D. Rockefeller is to build a $1,000,000 granite mansion on the summit of Kyknit Hill. The house will contain nearly 100 rooms and will be fireproof throughout. One of the features will be a sun parlor overlooking the Hudson.

PROVIDENCE, R. I.—We learn that the R. I. Society for the Collegiate Education of Women has purchased a site on Cushing street, adjoining the Women's College of Brown University, on which it is proposed erecting a gymnasium; $50,000 available.

PUEBLO, COLO.—The plans of Robt. S. Roeschlaub & Son, 52 King Block, Denver, have been accepted for the new high school to be erected at Orman and Grant avenues and Broadway and Michigan street. Cost, $400,000. J. F. Keating, Superintendent of School Buildings.

RICHMOND, VA.—The erection of a $100,000 Y. M. C. A. building is reported under consideration.

ROCKVILLE, CONN.—The H. Wales Lines Co., of Meriden, has secured the contract to erect a brick and stone edifice for St. Bernard's Parish. Cost, $60,000.

SEATTLE, WASH.—Plans are being prepared by Josenhans & Allan, 74 Hinckley block, for the steel and brick theatre to be erected by J. A. Moore on Second Ave., at a cost of $350,000.

Bids will be received until March 15 by Jas. Stephen, 726 New York building, for erecting a $125,000 Y. M. C. A. building, 120x120 feet. A. S. Allen, secretary.

SHEBOYGAN, WIS.—The County Board has decided to enlarge the Sheboygan County Asylum for the Insane by erecting an additional building, to cost about $50,000.

STEUBENVILLE, O.—Fred. W. Elliott, of Columbus, will prepare plans for the new infirmary buildings to be erected by Jefferson County, at a cost of $100,000.

SYRACUSE, N. Y.—A Y. M. C. A building, to cost $300,000, is under consideration.

SAN FRANCISCO, CAL.—A 6-story office and warehouse is to be erected on Beale and Mission Sts., for Mrs. Margaret H. Fuller, after plans by Albert Pissis, 307 Sansome St. Cost, $100,000.

ST. LOUIS, MO.—Russell A. Richardson is having plans prepared for a 3-story store and office building, 50x175 feet, to replace the structure recently destroyed by fire. Probable cost, $50,000.

The Mounds Park Sanatorium Association contemplate erecting a sanatorium for chronic and nervous diseases, on Thorne and Hiawatha Sts. For particulars, address Dr. R. O. Earl.

It is reported that the directors of the First National Bank intend erecting a $100,000 building at Collinsville and Missouri Aves. It is to be 6 stories high, the first floor to be occupied by the bank and the upper floors by offices.

ST. BONIFACE, MAN.—Sketch plans have been submitted for the proposed cathedral. Cost, $150,000.

SEATTLE, WASH.—I. E. Moses will erect a 10-story business block, 60x120 feet, at 2d and Stewart Sts., to cost $175,000. Plans by N. W. White.

SPOKANE, WASH.—The Odd Fellows propose to form a company and erect an $80,000 building.

SPANGLER, IND.—It is stated that the coal operators of Northern Cambria Co. desire to build a hospital in Spangler, to be known as the Miners' Accident Hospital of Northern Cambria Co. An effort is being made to secure an appropriation from the State.

SHAWNEE, TENN.—The Shawnee Chamber of Commerce has started a movement to secure a $50,000 county high school building.

ST. LOUIS, MO.—A $3,000,000 oil plant is talked of for St. Louis.

SHERMAN, I. T.—Plans have been received for the $150,000 Federal building.

SIOUX CITY, IA.—The erection of a new courthouse to cost $80,000 is under consideration.

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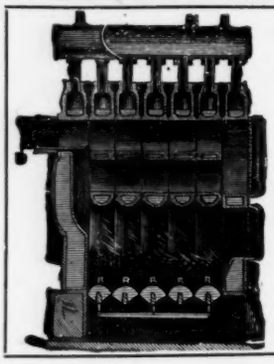

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St. Augustine, Fla.—The County Commissioners are said to be considering the erection of a new or the rebuilding of the present courthouse.

St. Louis, Mo.—Work will begin soon on the erection of proposed Robert Barnes Memorial Hospital, for which $400,000 is available. Bishop E. R. Hendrix, Kansas City, Mo.

St. Louis, Mo.—Plans are in preparation for a 6-story building 252 x 105 feet, to be erected at 30 South Main street, for the Crunden-Martin Woodenware Co., at a cost of $154,000.

St. Louis, Mo.—Theodore C. Link, Carleton Building, is preparing plans for the proposed $75,000 library building.

San Francisco, Cal.—It is reported that the congregation of Beth Israel will erect a $100,000 synagogue.

Seattle, Wash.—The Northern Pacific Railway Co. will erect eight 6-story buildings, each occupying half a block in the wholesale district of the city. Cost, $2,000,000.

Springfield, Ill.—The members of the Second Presbyterian Church are planning to erect an $80,000 edifice. Address Pastor.

Tacony, Pa.—In recognition of the fourth anniversary of its organization, the Roosevelt Rifles, now Company M of the First Regiment, has received as a donation from Henry Disston & Sons a plot of ground at Longshore and Torresdale Aves., as the site for an armory. Ground will be broken this spring for a 3-story brick and stone building, which will serve the double purpose of a clubhouse and drilling-place. In addition to the drill hall there will be a gymnasium and reading-room for the members, offices for the officers and dressing-rooms for the men.

Toledo, O.—Architect A. B. Benton, Los Angeles, Cal., is visiting various Y. M. C. A. buildings, prior to drawing plans for a $300,000 building which is to be erected this year in Los Angeles, Cal.

Architect George S. Mills, 505 Gardner building, is drawing plans for a 3-story pressed brick flat building to be erected by Irving Squire. It will be heated with steam, be modern throughout and cost $50,000.

Architects Bacon & Huber, 755 Spitzer Building, have awarded the general contract to Spieker & Co., Schmitt block, for the erection of the $100,000 flat building for A. W. Colton. A large portion of it will be sub-let.

Toledo, O.—Plans of the Wabash Railroad for a new union station at Toledo, have been completed and approved by President Joseph Ramsey, and within a short time the erection of the structure will be commenced. It will be a costly structure, covering several blocks.

Toledo, O.—Architect George S. Mills, 515-516 Gardner building, has been asked by Lyman Spitzer, second floor Spitzer building, to prepare drawings for a 1-story pressed brick store building, which is to be erected at the corner of 13th and Madison Sts. It will likely be about 50x100 feet, have plate glass windows, heated with steam and have modern improvements. The estimated cost is about $8,000.

Architect Walter C. Hudson, 717 Nasby building, has completed drawings for an 8-story building for George Metzger, president of the Toledo Stove & Range Works. The building will be erected at the intersections of Canton, Jackson and Speilbusch Aves. It will front 20 feet on Jackson, 185 feet on Shepard St. and 200 feet on Canton and Speilbusch Aves. The first floor is to be fitted up with store rooms, 41 in number, and the other floors into modern two-, three-, four-, five-, six-, seven- and eight-room apartments. The floors are to be of tile and cement, the walls will be of steel and red pressed brick, and the elevators will be erected on the exterior of the building. Architectural drawings make no provision for stairways. The first floor is to have an arcade 60x140 feet, with a cement floor. A fully equipped heating and power plant will be installed in connection with the building. The owner has announced that the building will cost about $125,000, and that bids are to be asked for shortly before the first of April.

Architect John W. Matz, Hartford building, is engaged in making drawings for a store and flat structure to be erected on Dorr St. by John Betts. It is to be modern throughout and will cost between $15,000 and $20,000.

Vicksburg, Miss.—The plans by Knowles & Co., New York, N. Y., have been accepted for proposed 8-story bank and office building for the First National Bank, to be of brick with stone trimmings. Cost, $120,000. Bids for construction will be asked at once.

R. H. Hunt, of Chattanooga, Tenn., will prepare plans and specifications for proposed edifice for the Presbyterian Society.

Warren, O.—A bill has been introduced in Congress asking for an appropriation of $100,000 for a Federal building.

Walker, Mass.—It is stated that the State Board of Control and the Advisory Committee are about to petition the Legislature for an appropriation of $100,000 for the erection of a sanitarium for consumptives near Walker. It is hoped to begin construction in the spring.

Walla Walla, Wash.—The erection of a Y. M. C. A. building to cost about $50,000 is under consideration. W. G. Coleman is chairman of committee having the matter in charge.

Webster City, Ia.—An appropriation of $70,000 has been made by Congress for the new Federal building for Webster City.

Wilkinsburg, Pa.—Architects Milligan & Miller are preparing plans for a church for the Christian Reform congregation. Stone and brick. Cost, $30,000. Rev. Grant Walters is pastor.

Walla Walla, Wash.—The School Board has decided to erect a $50,000 school.

Washington, D. C.—It is reported that John W. Points will erect $60,000 apartment house.

Waycross, Ga.—The erection of a new city hall is reported under consideration.

Wyandotte, Mich.—The citizens are reported to have voted in favor of issuing $50,000 bonds to erect a high school.

York, Pa.—The directors of the York Hotel Co. are contemplating improvements to the Colonial Hotel to the amount of $90,000.

York, Pa.—St. Paul's United Evangelical Congregation will erect a $70,000 edifice.

Youngstown, O.—Report states that the directors of the First National Bank will erect a $100,000 building on W. Federal St.

Youngstown, O.—Joseph Wess and others will build a skating rink, 100x200 feet, at Avon Park. Cost, $30,000.

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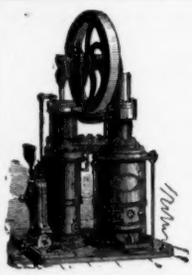

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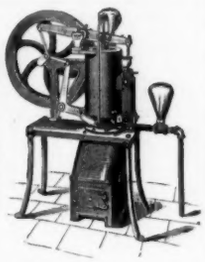

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